A Project Report
On

Krishi e-Connect Portal

(MCA 2022-24)

Submitted To

Lovely Professional University

in partial full fulfillments of the requirements for the award of the degree of

Master of Computer Application

Submitted By:	**Supervised By:**
1. Suraj Kumar Pandey **Reg-12210041**	**Navnit Kaur-29075** **(Assistant Professor)**
2. Shubham Kumar **Reg-12210602**	

Department of Computer Application

Lovely Professional University,Punjab

CERTIFICATE

This certificate serves to affirm that **CARGC0068 Group** has diligently completed the pre-project planning phase, titled "***Krishi E-Connect Portal***," under my meticulous guidance and close supervision. I attest that the work presented herein is the culmination of original research and study conducted by the aforementioned team. Furthermore, I certify that no portion of this report has been previously submitted for the fulfillments of any other degree or diploma. With utmost confidence, I declare that the content of this report is suitable for submission and meets the criteria for partial fulfillments required for the conferment of the Master of Computer Application degree.

May 2024 Navnit Kaur

Declaration

The Krishi E-Connect Portal serves as a comprehensive platform aimed at centralising information related to agricultural schemes and benefits provided by both state and central government authorities. Through this portal, farmers can easily access and benefit from various government schemes, communicate with relevant agricultural authorities, and streamline interactions with fellow farmers.

This project encompasses the development of both a user-facing portal for farmers and an official portal for administrative purposes. The user-facing portal allows farmers to log in, view available schemes, check the status of scheme applications, register complaints, and communicate with relevant authorities. On the other hand, the official portal enables administrative personnel to manage farmer records, allocate schemes, update farmer status, and facilitate inter-departmental communication seamlessly.

I hereby affirm that the work presented in this project report is original and has not been submitted elsewhere for any academic or professional purpose. All sources of information and assistance utilised in the development of this project have been duly acknowledged and referenced.

I further declare that any resemblance to other projects, whether published or unpublished, is purely coincidental.

1. ***Suraj Kumar Pandey-12210041***

2. ***Shubham Kumar-12210602***

Abstract

The "Krishi E-Connect Portal" marks a pivotal advancement in agricultural technology, addressing critical gaps that hindered the effectiveness of previous farmer portals. Unlike its predecessors, this innovative platform integrates comprehensive centroid information about state and central government schemes, offering farmers unparalleled access to vital resources and support.

One of the key challenges faced by farmers in the past was the lack of centralised information regarding government schemes. The Krishi E-Connect Portal addresses this issue by providing detailed centroid information, empowering farmers to make informed decisions about scheme participation and application. Additionally, the portal facilitates seamless communication with higher-level authorities, eliminating the barriers that previously hindered farmer access to essential support services.

Furthermore, the introduction of personal login portals enhances user experience and security, enabling farmers to access tailored information and services with ease. By bridging the gap between farmers and government initiatives, the Krishi E-Connect Portal fosters transparency, efficiency, and empowerment within the agricultural community, propelling the sector towards sustainable growth and prosperity.

1. Introduction

The "Krishi E-Connect Portal" represents a groundbreaking initiative at the intersection of technology and agriculture, aimed at revolutionising the way farmers access information, engage with government schemes, and communicate with agricultural authorities. Leveraging a diverse array of cutting-edge technologies including PHP, MySQL, HTML5, CSS, jQuery, Aadhaar API, Ajax, and Bootstrap, this innovative platform offers a holistic solution to address the multifaceted challenges faced by farmers across the nation.

In recent years, technological advancements have transformed various sectors, yet the agricultural industry has often lagged behind in harnessing the full potential of digital solutions. The Krishi E-Connect Portal seeks to bridge this gap by providing farmers with a user-friendly, feature-rich platform that serves as a one-stop destination for all their agricultural needs.

Traditionally, farmers have encountered numerous hurdles in accessing crucial information about government schemes and resources. The lack of centralised data and communication channels often resulted in inefficiencies and missed opportunities. However, with the implementation of the Krishi E-Connect Portal, these challenges are effectively addressed.

At the core of the portal's functionality lies the integration of centroid information about state and central government schemes. Through an intuitive interface, farmers can easily navigate through a comprehensive database of schemes, gaining insights into eligibility criteria, application processes, and benefits. This centralised repository of information empowers farmers to make informed decisions and maximize their participation in relevant initiatives.

Furthermore, the portal facilitates seamless communication between farmers and higher-level authorities through personalized login portals and Aadhaar API integration. Farmers can register complaints, seek assistance, and engage in dialogue with agricultural experts and government officials, thereby fostering transparency, accountability, and responsiveness within the agricultural ecosystem.

The technological stack underpinning the Krishi E-Connect Portal is carefully selected to ensure optimal performance, scalability, and security. PHP and MySQL form the backbone of the backend infrastructure, facilitating robust data management and processing capabilities. HTML5, CSS, jQuery, and Bootstrap are utilized to craft a visually appealing and responsive user interface, enhancing accessibility across various devices and screen sizes. Ajax is employed to enable seamless asynchronous communication between the client and server, enhancing the portal's interactivity and responsiveness.

In summary, the Krishi E-Connect Portal represents a paradigm shift in agricultural technology, harnessing the power of modern software development methodologies and technologies to empower farmers, streamline government services, and drive sustainable growth in the agricultural sector. Through collaboration, innovation, and a steadfast commitment to leveraging technology for social good, this project endeavors to create tangible and lasting impact in the lives of farmers and rural communities.

1.1 Literature Review

The integration of technology in agriculture, particularly through digital platforms and portals, has emerged as a transformative force in addressing the complex challenges faced by farmers worldwide. A review of existing literature highlights the significance of initiatives such as the Krishi E-Connect Portal in revolutionizing agricultural practices, enhancing farmer welfare, and driving sustainable rural development.

1. **Digital Agriculture Initiatives**: Numerous studies have documented the proliferation of digital agriculture initiatives aimed at improving farm productivity, market access, and resource management. Platforms similar to the Krishi E-Connect Portal have been developed in various countries, offering insights into best practices, challenges, and opportunities associated with such endeavors (Braun et al., 2020).
2. **Impact of Information Technology**: Research underscores the transformative impact of information technology in empowering farmers with access to vital resources, market information, and advisory services. Digital platforms enable farmers to make informed decisions, enhance productivity, and mitigate risks associated with weather fluctuations and market uncertainties (Qaim, 2017).
3. **Role of Government Schemes**: Government interventions and agricultural schemes play a crucial role in shaping the livelihoods of farmers and rural communities. Studies emphasize the importance of effective implementation, transparency, and accessibility of government schemes in ensuring equitable distribution of benefits and fostering inclusive growth (Deininger & Liu, 2013).
4. **User Experience and Interface Design**: Literature on user experience (UX) and interface design in agricultural platforms highlights the importance of intuitive navigation, personalized features, and responsive design in enhancing user engagement and adoption. Research underscores the need for user-centric design principles to ensure usability and accessibility for farmers with varying levels of technological literacy (Dandekar et al., 2019).
5. **Data Security and Privacy**: With the increasing digitization of agricultural services, concerns regarding data security and privacy have garnered attention. Studies emphasize the need for robust data protection measures, compliance with regulatory frameworks, and user consent mechanisms to safeguard sensitive information and build trust among users (Shah et al., 2021).
6. **Evaluating Impact and Effectiveness**: Evaluating the impact and effectiveness of digital agriculture initiatives is essential for assessing their contribution to farmer welfare and rural development. Research

methodologies such as randomized controlled trials, impact evaluations, and case studies offer insights into the outcomes, challenges, and lessons learned from implementing similar projects (Davis et al., 2019).

In conclusion, the literature review underscores the significance of the Krishi E-Connect Portal in leveraging technology to address the information asymmetry, communication barriers, and administrative inefficiencies that hinder agricultural development. By drawing insights from existing research and best practices, this project aims to contribute to the growing body of knowledge on digital agriculture and facilitate evidence-based decision-making for sustainable rural transformation.

Research Gap

One notable research gap within the agricultural sector pertains to the absence of personalized farmer login portals in existing systems, coupled with the manual nature of administrative processes for updating farmer statuses and managing scheme allocations. While various studies have explored the impact of digital technology on agricultural development and governance, there remains limited research addressing the specific challenges arising from the lack of personalized farmer portals and manual administrative procedures. This gap highlights the need for empirical investigations into the consequences of information asymmetry, inefficiencies, and potential corruption associated with these shortcomings.

Moreover, there is a dearth of studies examining the feasibility, effectiveness, and adoption of digital solutions, such as the Krishi E-Connect Portal, in addressing these challenges and enhancing agricultural governance. Research in this area could shed light on the barriers hindering the adoption of digital platforms among farmers and administrative authorities, as well as the strategies for overcoming these barriers. Additionally, there is a need for comparative studies evaluating the impact of personalized farmer portals on farmer empowerment, administrative efficiency, and overall agricultural governance outcomes. By addressing these research gaps, scholars can contribute to a deeper understanding of the role of digital technology in transforming agricultural systems and governance structures, thereby informing policy decisions and promoting sustainable rural development.

System Analysis

The system analysis phase of the Krishi E-Connect Portal project involved understanding stakeholder needs, defining system objectives, and assessing technological solutions. Through interviews and surveys, stakeholders' requirements were identified, including the need for centralized scheme information and streamlined administrative processes. Clear system objectives were defined, aligning with the overarching goal of enhancing agricultural governance.

Technologies such as PHP, MySQL, HTML5, and Bootstrap were evaluated for their suitability. Detailed system requirements were gathered, encompassing functional and non-functional aspects. Prototyping and validation activities were conducted to refine the proposed solutions. This phase laid a solid foundation for designing and developing the portal, ensuring it effectively addressed the challenges faced by farmers and agricultural authorities while leveraging appropriate technological solutions.

Problem Identification

The need for the Krishi E-Connect Portal project stems from several critical challenges faced by farmers and agricultural authorities within the existing agricultural governance framework. These challenges include:

1. **Information Asymmetry**: Farmers often struggle to access up-to-date information about government schemes, market trends, and agricultural best practices due to the lack of centralized and easily accessible platforms.
2. **Communication Barriers**: There is a significant gap in communication between farmers and agricultural authorities, leading to delays in accessing support services, registering complaints, and seeking assistance.
3. **Manual Administrative Processes**: Administrative authorities rely on manual processes for updating farmer statuses, managing scheme allocations, and communicating with stakeholders, leading to inefficiencies and potential corruption.
4. **Lack of Personalized Portals**: Farmers do not have personalized login portals to track their participation in government schemes, leading to difficulties in monitoring application statuses and accessing tailored information.
5. **Limited Access to Technology**: Many farmers, particularly those in remote rural areas, have limited access to digital technology and face barriers in adopting digital solutions for agricultural management and governance.

Addressing these needs through the Krishi E-Connect Portal project is essential for enhancing agricultural governance, improving farmer welfare, and promoting sustainable rural development. By centralizing scheme information, streamlining administrative processes, and facilitating seamless communication between stakeholders, the project aims to bridge the existing gaps and empower farmers with access to vital resources and support services.

Existing System

The existing agricultural governance system is characterized by several shortcomings that hinder effective communication, information access, and administrative processes within the agricultural sector. Key features of the existing system include:

1. **Fragmented Information**: Information about government schemes, market trends, and agricultural best practices is dispersed across multiple sources, making it challenging for farmers to access relevant and up-to-date information.
2. **Manual Administrative Processes**: Administrative authorities rely on manual processes for updating farmer statuses, managing scheme allocations, and communicating with stakeholders, leading to inefficiencies, delays, and a heightened risk of corruption.
3. **Limited Communication Channels**: Communication between farmers and agricultural authorities is often hindered by barriers such as distance, language, and lack of dedicated platforms for interaction, resulting in delays in accessing support services and registering complaints.
4. **Absence of Personalized Portals**: Farmers do not have personalized login portals to track their participation in government schemes, monitor application statuses, and access tailored information, limiting their ability to engage effectively with agricultural governance processes.
5. **Technology Accessibility Challenges**: Many farmers, particularly those in remote rural areas, face barriers in accessing and adopting digital technologies due to factors such as limited internet connectivity, technological literacy, and infrastructure.

Overall, the existing system lacks the integration, transparency, and efficiency needed to effectively address the complex challenges faced by farmers and agricultural authorities. There is a pressing need for a comprehensive digital solution, such as the Krishi E-Connect Portal, to centralize information, streamline administrative processes, and facilitate seamless communication between stakeholders, thereby promoting sustainable agricultural development and farmer empowerment.

PROPOSED MODEL

The proposed Krishi E-Connect Portal aims to address the shortcomings of the existing agricultural governance system by introducing a comprehensive digital platform that centralizes information, streamlines administrative processes, and facilitates seamless communication between farmers and agricultural authorities. Key features of the proposed model include:

1. **Centralized Information Hub**: The portal will serve as a centralized repository of information about government schemes, market trends, agricultural best practices, and relevant resources, ensuring easy access for farmers and agricultural stakeholders.
2. **Personalized Farmer Portals**: Each farmer will have access to a personalized login portal where they can track their participation in government schemes, monitor application statuses, receive tailored recommendations, and engage in communication with authorities.
3. **Streamlined Administrative Processes**: Administrative authorities will have access to a dedicated administrative portal for managing farmer records, allocating schemes, updating statuses, and facilitating inter-departmental communication, thereby reducing manual workload and improving efficiency.
4. **Communication Channels**: The portal will feature various communication channels, including messaging systems, forums, and complaint registration forms, to facilitate seamless interaction between farmers, agricultural authorities, and experts, enabling timely assistance and support services.
5. **Integration of Technologies**: The portal will leverage a combination of technologies, including PHP, MySQL, HTML5, CSS, jQuery, Aadhaar API, Ajax, and Bootstrap, to ensure robust functionality, scalability, and security, while also ensuring compatibility with diverse user devices and internet connectivity levels.
6. **User-Centric Design**: The portal will be designed with a focus on user experience, ensuring intuitive navigation, accessibility, and responsiveness across different devices and screen sizes, thereby catering to the diverse needs and preferences of farmers and agricultural authorities.

Overall, the proposed Krishi E-Connect Portal model aims to empower farmers, enhance agricultural governance, and promote sustainable rural development by leveraging technology to overcome existing challenges and foster transparency, efficiency, and inclusivity within the agricultural ecosystem.

PRELIMINARY INVESTIGATION

The initial examination of the e-Krishi Connect portal project marked a significant step in gauging its feasibility, understanding its requirements, and assessing potential outcomes. This preliminary investigation encompassed several key facets, including stakeholder analysis, issue identification, and feasibility evaluation.

Stakeholder analysis was paramount to identify and comprehend the roles, interests, and expectations of all involved parties. Through interviews, surveys, and consultations, stakeholders such as farmers, government officials at various levels, IT developers, and administrators were engaged to glean their insights and perspectives. This process provided invaluable input for setting project objectives and delineating requirements.

The investigation also aimed at identifying prevalent issues faced by farmers and government authorities in accessing agricultural services and government schemes. By conducting thorough literature reviews, analyzing data, and consulting domain experts, common challenges such as opacity, ineffective communication channels, and bureaucratic impediments emerged as primary concerns to be tackled by the e-Krishi Connect portal.

Feasibility assessment was pivotal in evaluating the project's technical, economic, and operational viability. Technical feasibility scrutinized the availability of necessary technologies, infrastructure, and expertise for portal development. Economic feasibility involved analyzing the project's cost-benefit ratio, encompassing development expenses, potential savings, and revenue generation prospects. Operational feasibility entailed evaluating the project's alignment with existing processes, organizational capabilities, and potential hurdles during implementation.

In integrating the findings of the preliminary investigation into the project report, the insights gleaned from stakeholder analysis, issue identification, and feasibility assessment serve as foundational pillars informing subsequent project phases.

2.2.System Requirements

2.3.1 Functional Requirements:

Scheme Application: One of the primary functions of the e-Krishi Connect portal is to enable farmers to apply for government schemes seamlessly. This functionality should allow farmers to access information about available schemes, determine their eligibility, and submit applications online. Additionally, the system should support the processing and tracking of these applications by relevant authorities.

Communication Tools: The portal should provide robust communication tools that facilitate interaction between farmers and government authorities at different levels, including block, district, state, and central levels. These communication tools may include messaging systems, chat functionalities, and notification mechanisms to ensure timely and effective communication regarding scheme updates, inquiries, and other relevant information.

Complaint Management: To address grievances and issues faced by farmers, the portal should include a complaint management system. This system should allow farmers to lodge complaints directly against government departments or officials through the portal. It should enable farmers to describe their concerns, attach relevant documents or evidence, and track the status of their complaints until resolution.

Community Forums: The e-Krishi Connect portal should feature community forums or discussion boards where farmers can engage with each other, share experiences, and exchange knowledge and best practices. These forums serve as valuable platforms for collaboration, peer support, and learning within the farming community. Moderation tools should be implemented to ensure a respectful and productive environment for discussions.

2.3.2 Non-Functional Requirements:

Performance: The portal must exhibit optimal performance, with fast response times and minimal latency, even under heavy user load. Performance testing should be conducted to assess the portal's responsiveness and scalability. The system should be capable of handling a large number of concurrent users accessing various functionalities simultaneously without degradation in performance.

Security: Security is paramount to protect sensitive farmer data and ensure the integrity of the system. The portal should implement robust security measures, including user authentication, authorization mechanisms, data encryption, and secure transmission protocols. Access controls should be enforced to restrict unauthorized access to sensitive information.

Usability: The user interface of the portal should be intuitive, user-friendly, and accessible across different devices and internet speeds. Design considerations should prioritize ease of navigation, clear labeling, and consistency in layout and design elements. Usability testing should be conducted to gather feedback and iteratively improve the user experience.

Reliability: The portal should be reliable, with minimal downtime and data loss. Redundancy measures should be in place to ensure data backup and disaster recovery mechanisms. System monitoring tools should be utilized to detect and address any issues promptly, minimizing disruptions to users' access to critical functionalities.

Scalability: The system should be designed to accommodate future growth in both user base and functionalities. Scalability considerations should encompass hardware infrastructure, software architecture, and database capacity. The system should be able to scale horizontally or vertically to meet increasing demands without significant performance degradation or downtime.

3. System Design

3.1.System Architecture (High-Level Design):

The e-Krishi Connect portal is built on a robust and scalable architecture, leveraging a combination of front-end and back-end technologies, along with various APIs for authentication and communication functionalities.

3.2.Technology Stack:

1. **Front-end Interface:**
    - The front-end interface of the portal is developed using HTML, CSS, JavaScript, and jQuery to create a visually appealing and interactive user experience.
    - Bootstrap framework is utilized for responsive design, ensuring seamless accessibility across devices of different screen sizes.
    - User interactions such as scheme application, communication tools, and community forums are implemented using AJAX for asynchronous data exchange, providing a seamless and dynamic user experience.
2. **Back-end Services:**
    - PHP serves as the primary server-side scripting language for implementing back-end services and business logic.
    - MySQL database is utilized for storing and managing data related to user profiles, scheme information, communication logs, and complaint records.
    - PHP scripts interact with the MySQL database using MySQLi or PDO (PHP Data Objects) for secure and efficient data retrieval and manipulation.
3. **Authentication and Integration:**
    - Aadhaar API is integrated into the portal for user authentication, enabling farmers to securely authenticate their identity using Aadhaar credentials.
    - SMTP API is utilized for email communication, allowing the portal to send notifications, alerts, and updates to users via email.

- These APIs are integrated into the back-end services using PHP libraries or SDKs provided by the respective service providers, ensuring seamless integration and secure data exchange.

4. **Security Infrastructure:**
    - Security measures such as user authentication, authorization, and data encryption are implemented within the back-end services using PHP frameworks or libraries.
    - HTTPS protocol is enforced to secure data transmission between the client and server, protecting sensitive information from interception or tampering.
5. **Scalability and Performance Optimization:**
    - The architecture is designed to be scalable and performance-optimized, capable of handling increasing user loads and data volumes.
    - Caching mechanisms may be implemented using Memcached or Redis to optimize response times and reduce database load.
    - Load balancing and server clustering techniques are employed to distribute incoming traffic across multiple servers, ensuring high availability and fault tolerance.

3.2.3 Database

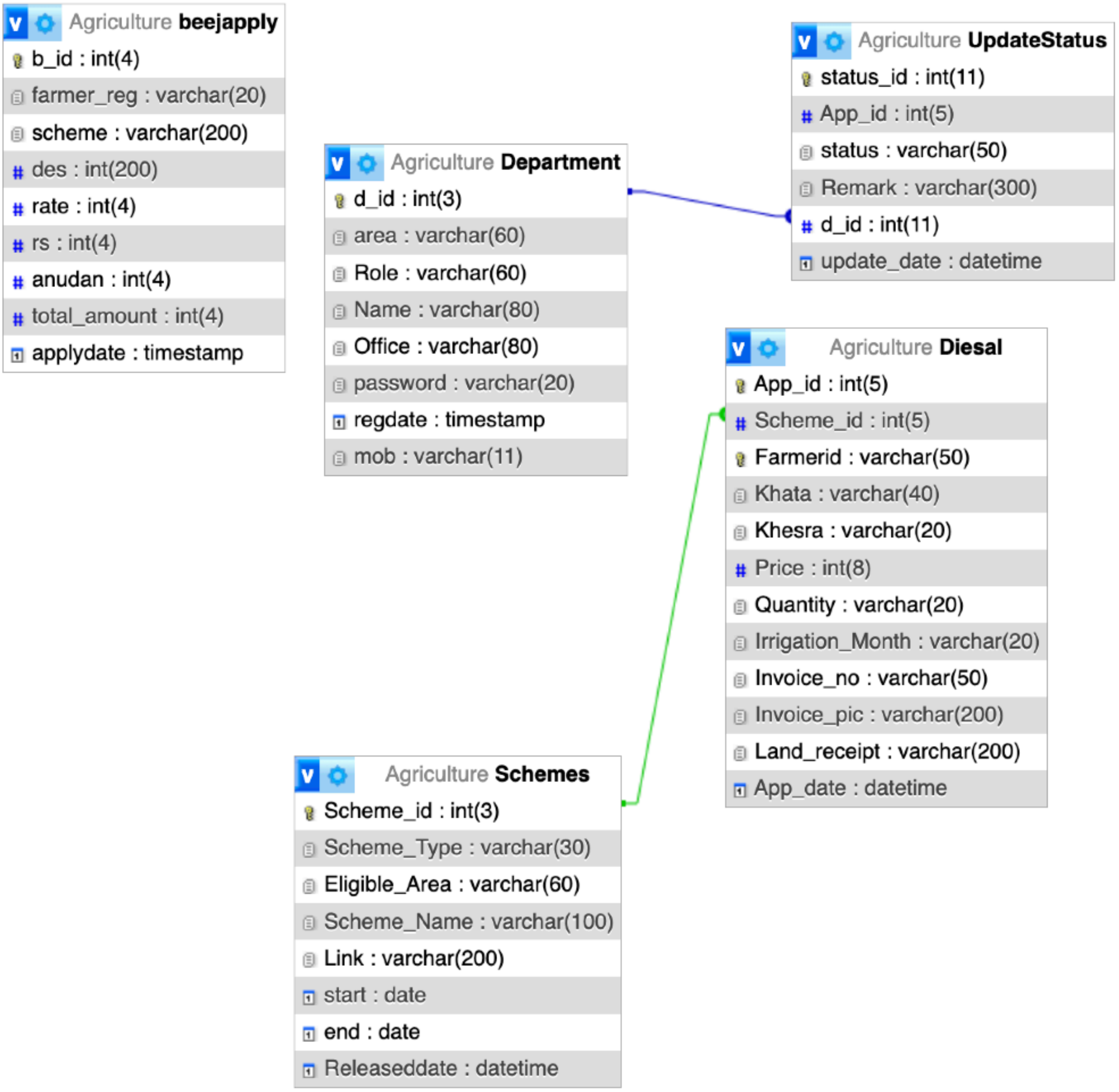
The e-Krishi Connect portal relies on a robust database structure to store and manage various types of data, including user information, scheme details, communication logs, and complaint records. The database design is crucial for ensuring data integrity, efficient retrieval, and scalability. Here's an outline of the database design for the portal:

1. **Community Communication Table:**
    - This table stores communication logs between farmers within the community forum.
    - Fields may include communication ID, sender ID (farmer), receiver ID (farmer), message content, timestamp, and status (read, unread).
2. **Announcement Table:**
    - The announcement table contains information about announcements made by government departments.

- Fields may include announcement ID, department ID, announcement content, timestamp, and status (active, inactive).

3. **Query Table:**
   - This table tracks queries submitted by farmers to government authorities.
   - Fields may include query ID, farmer ID, department ID, query content, timestamp, and status (pending, resolved).
4. **Farmer Registration Table:**
   - The farmer registration table stores details of registered farmers.
   - Fields may include farmer ID, username, password (hashed), email, contact number, Aadhaar ID, registration date, and status.
5. **Department Table:**
   - This table contains information about government departments responsible for agricultural schemes.
   - Fields may include department ID, department name, contact information, and responsible official.
6. **Scheme List Table:**
   - The scheme list table provides details of available government schemes.
   - Fields may include scheme ID, scheme name, description, eligibility criteria, application deadline, department ID, and status.
7. **Irrigation Apply Table:**
   - This table tracks irrigation applications submitted by farmers.
   - Fields may include application ID, farmer ID, scheme ID, application date, status (pending, approved, rejected), and additional application details.
8. **Update Status for Scheme Table:**
   - The update status table records updates made to the status of government schemes.
   - Fields may include update ID, scheme ID, updated status, update date, and update description.
9. **Department Communication Table:**

- This table stores communication logs between government departments.
- Fields may include communication ID, sender department ID, receiver department ID, message content, timestamp, and status.



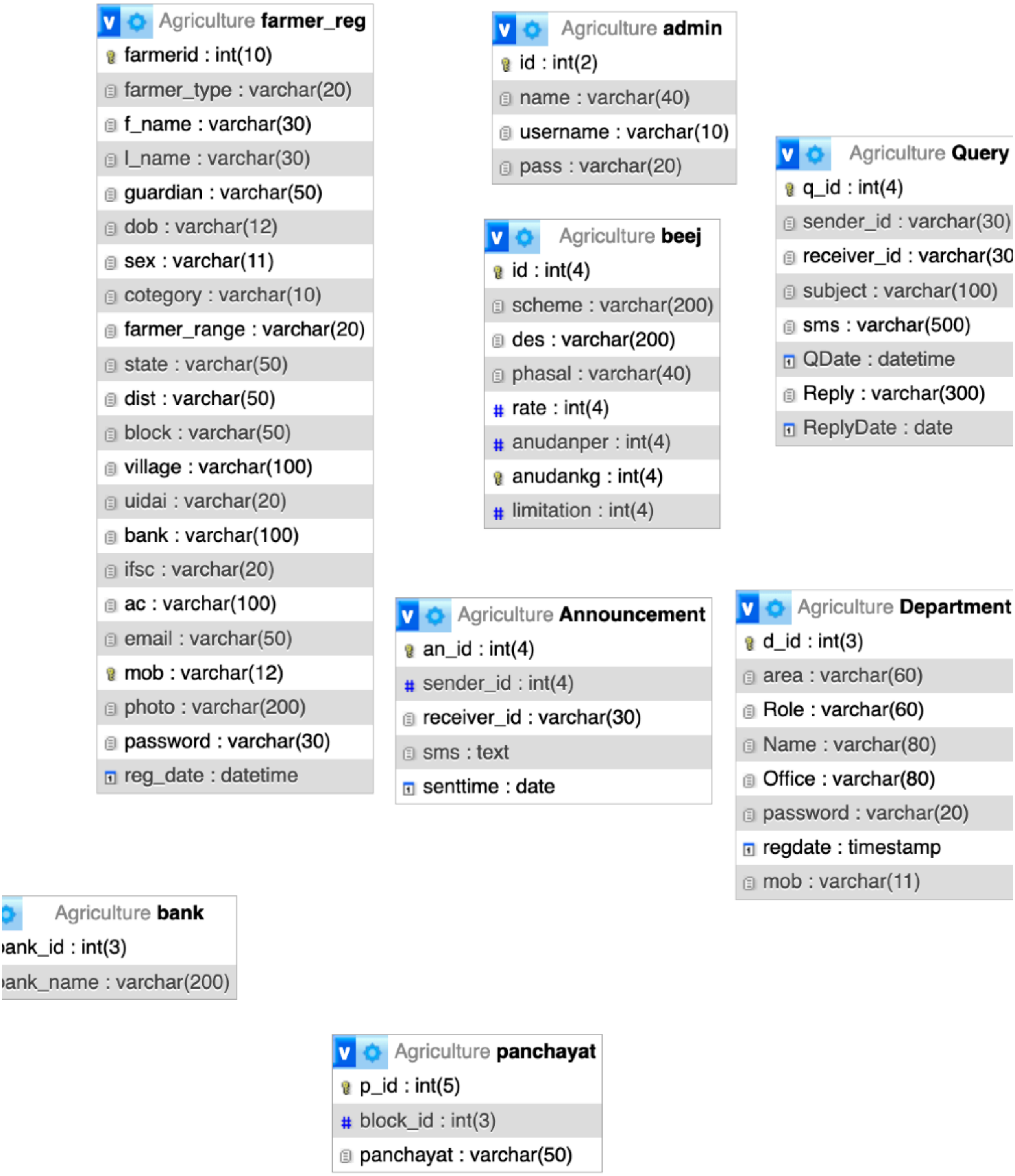
Agriculture **beejapply**
b_id : int(4)
farmer_reg : varchar(20)
scheme : varchar(200)
des : int(200)
rate : int(4)
rs : int(4)
anudan : int(4)
total_amount : int(4)
applydate : timestamp

Agriculture **Department**
d_id : int(3)
area : varchar(60)
Role : varchar(60)
Name : varchar(80)
Office : varchar(80)
password : varchar(20)
regdate : timestamp
mob : varchar(11)

Agriculture **UpdateStatus**
status_id : int(11)
App_id : int(5)
status : varchar(50)
Remark : varchar(300)
d_id : int(11)
update_date : datetime

Agriculture **Diesal**
App_id : int(5)
Scheme_id : int(5)
Farmerid : varchar(50)
Khata : varchar(40)
Khesra : varchar(20)
Price : int(8)
Quantity : varchar(20)
Irrigation_Month : varchar(20)
Invoice_no : varchar(50)
Invoice_pic : varchar(200)
Land_receipt : varchar(200)
App_date : datetime

Agriculture **Schemes**
Scheme_id : int(3)
Scheme_Type : varchar(30)
Eligible_Area : varchar(60)
Scheme_Name : varchar(100)
Link : varchar(200)
start : date
end : date
Releaseddate : datetime



Agriculture **farmer_reg**
farmerid : int(10)
farmer_type : varchar(20)
f_name : varchar(30)
l_name : varchar(30)
guardian : varchar(50)
dob : varchar(12)
sex : varchar(11)
cotegory : varchar(10)
farmer_range : varchar(20)
state : varchar(50)
dist : varchar(50)
block : varchar(50)
village : varchar(100)
uidai : varchar(20)
bank : varchar(100)
ifsc : varchar(20)
ac : varchar(100)
email : varchar(50)
mob : varchar(12)
photo : varchar(200)
password : varchar(30)
reg_date : datetime

Agriculture **admin**
id : int(2)
name : varchar(40)
username : varchar(10)
pass : varchar(20)

Agriculture **beej**
id : int(4)
scheme : varchar(200)
des : varchar(200)
phasal : varchar(40)
rate : int(4)
anudanper : int(4)
anudankg : int(4)
limitation : int(4)

Agriculture **Query**
q_id : int(4)
sender_id : varchar(30)
receiver_id : varchar(30
subject : varchar(100)
sms : varchar(500)
QDate : datetime
Reply : varchar(300)
ReplyDate : date

Agriculture **Announcement**
an_id : int(4)
sender_id : int(4)
receiver_id : varchar(30)
sms : text
senttime : date

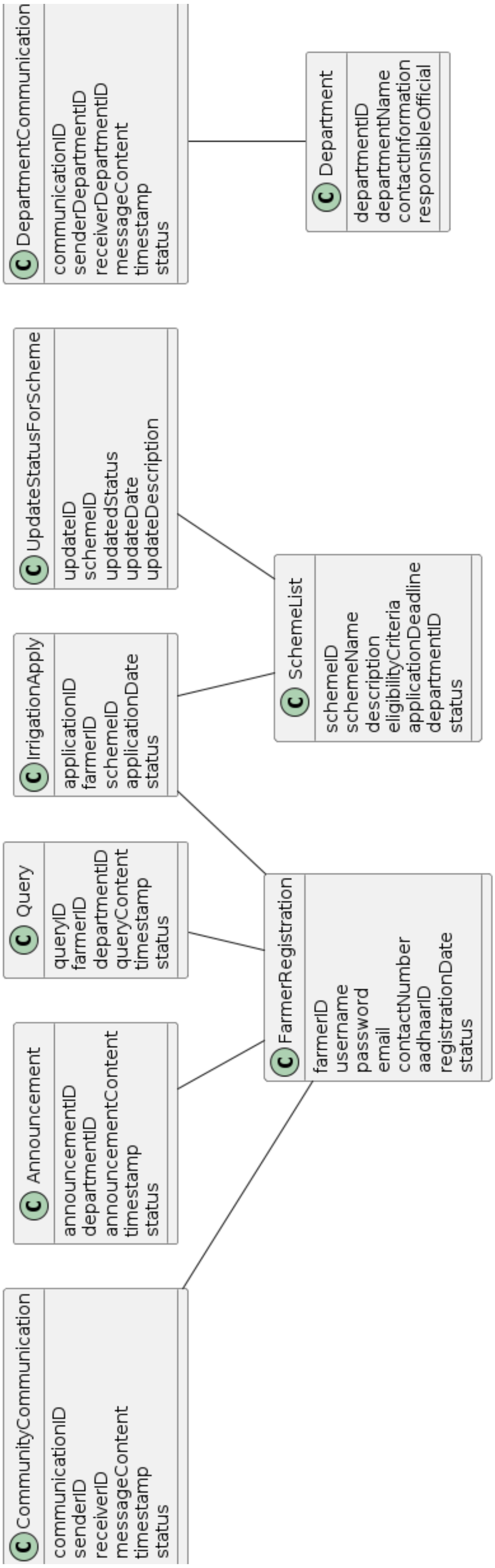
Agriculture **Department**
d_id : int(3)
area : varchar(60)
Role : varchar(60)
Name : varchar(80)
Office : varchar(80)
password : varchar(20)
regdate : timestamp
mob : varchar(11)

Agriculture **bank**
ank_id : int(3)
ank_name : varchar(200)

Agriculture **panchayat**
p_id : int(5)
block_id : int(3)
panchayat : varchar(50)

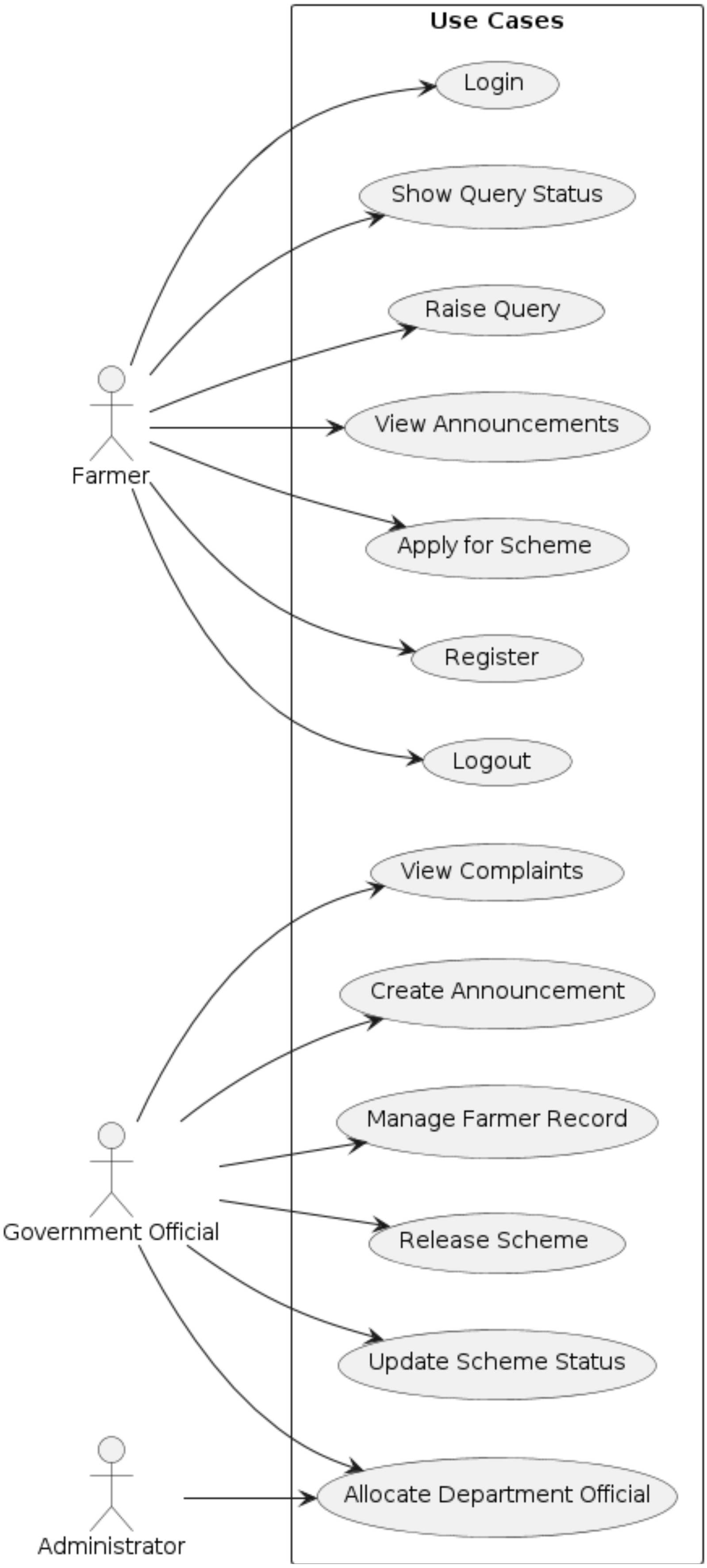
3.3 System Design Details

3.3.1.class diagram:



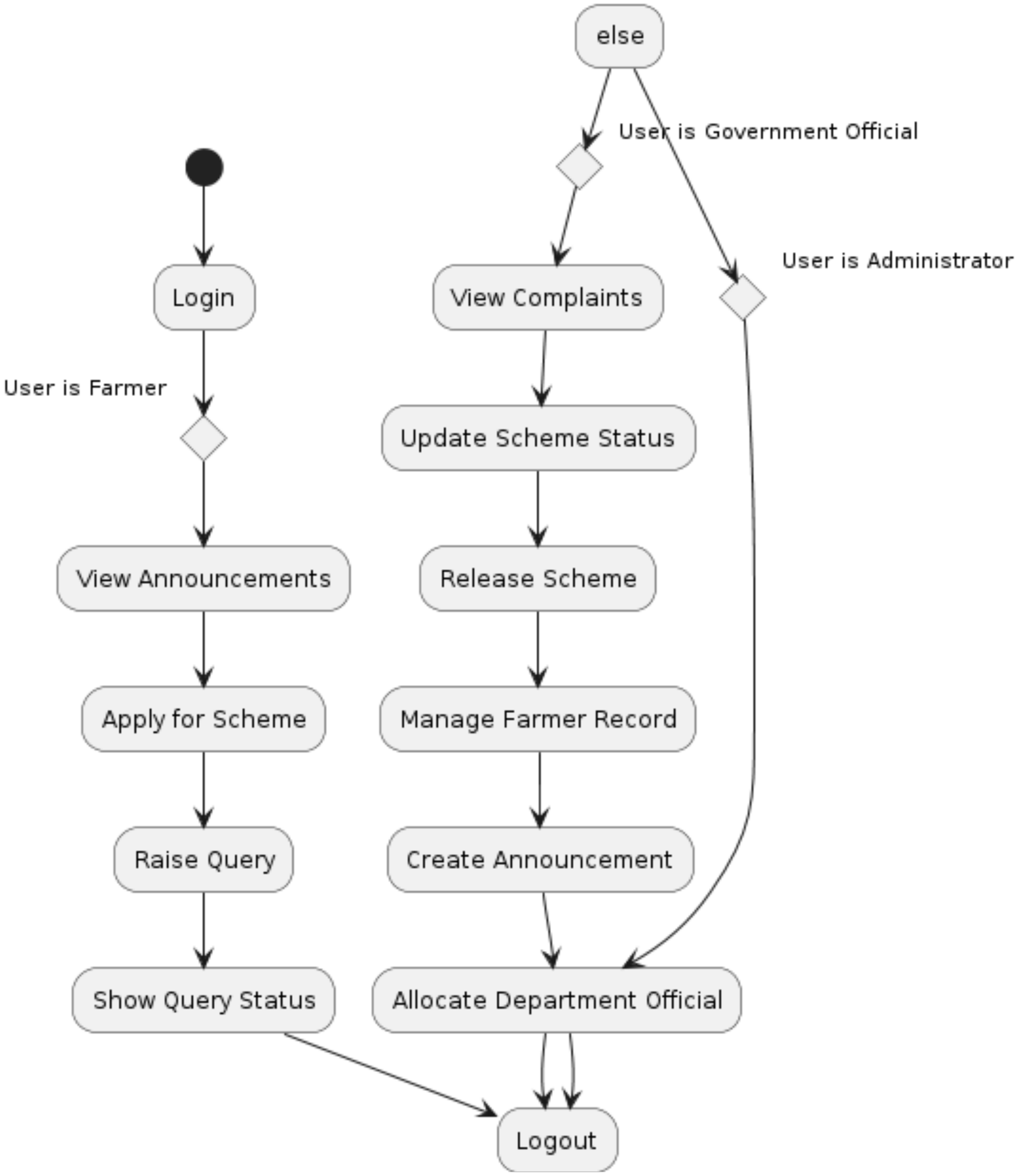
Class diagram

3.3.2. use case diagram:



Use case diagram of krishi e-connect

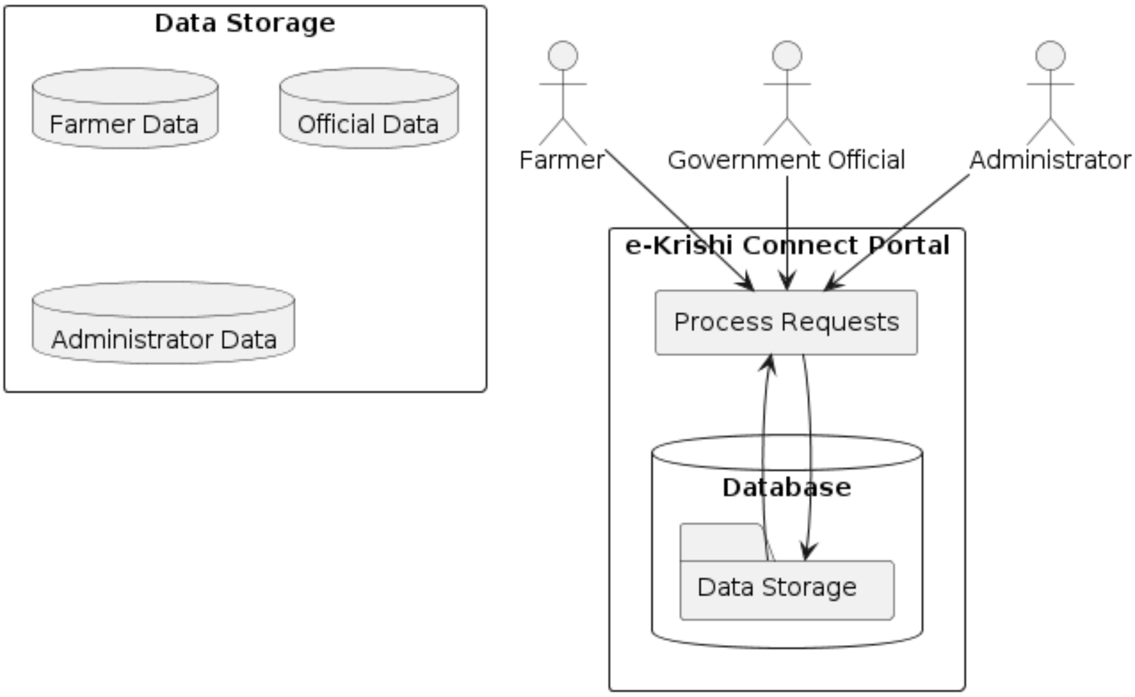
3.3.3.Activity Diagram:



Activity Diagram

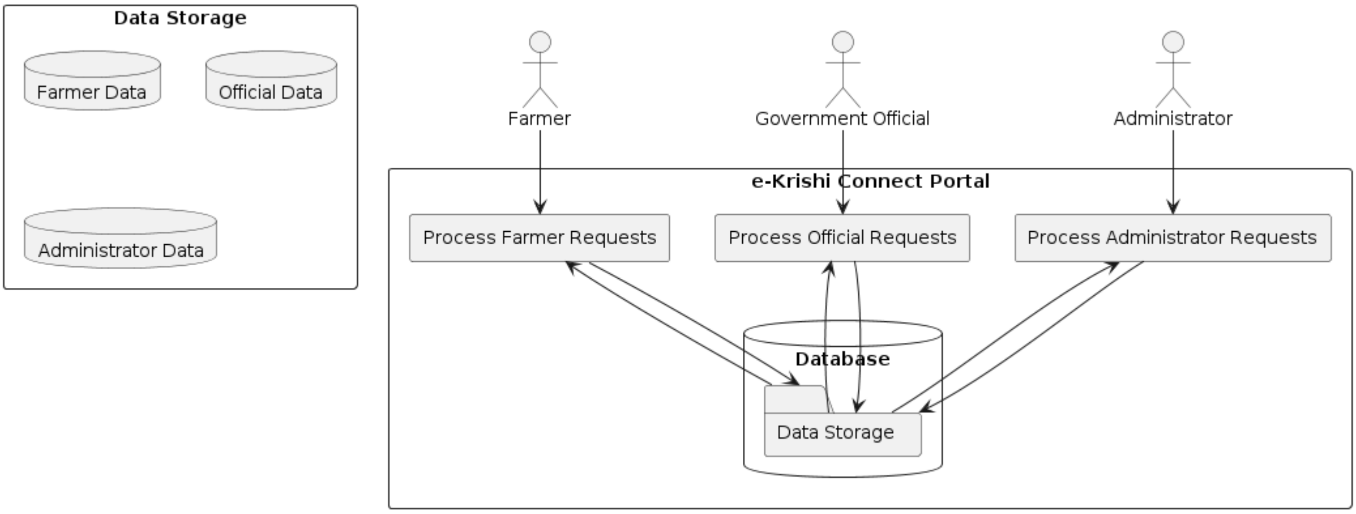
3.3.4. DFD Diagram

0 LEVEL DFD

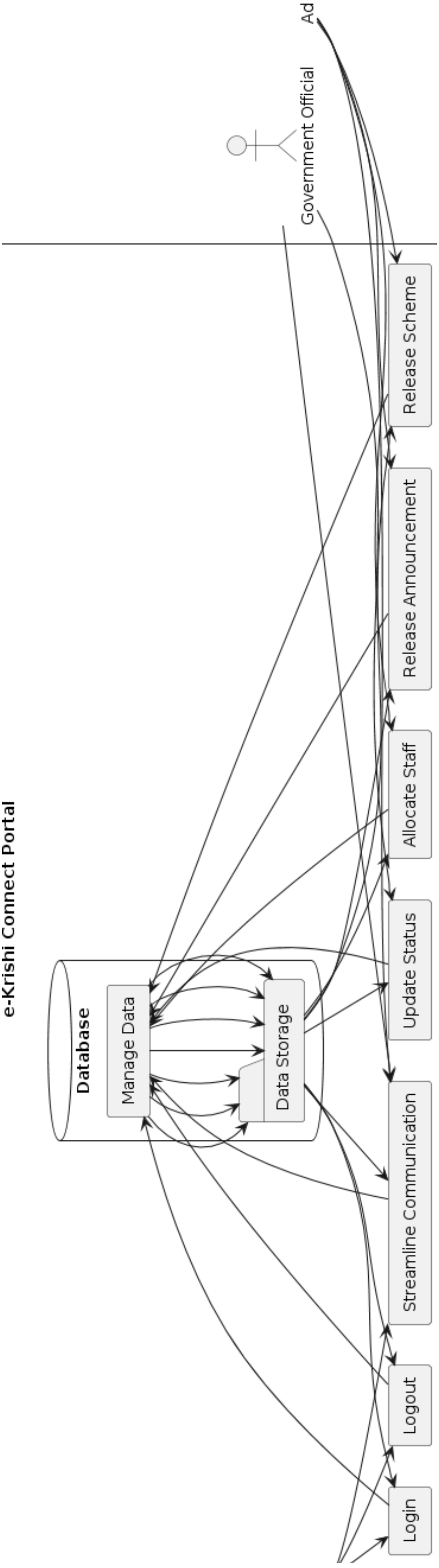


0 level DFD Of Krishi e-Connect

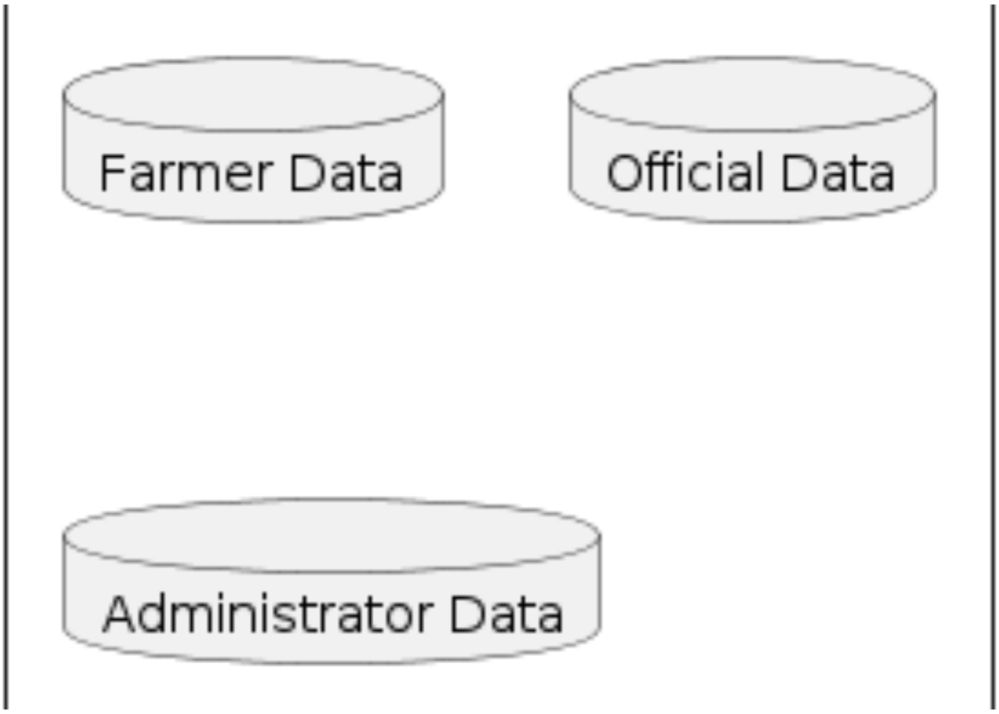
1st LEVEL DFD



1st level DFD of Krishi e-Connect



2nd level did



Database

5. System Implementation and Testing

5.1. Deployment Process

The deployment process outlines how the e-Krishi Connect portal will be deployed to the production environment. It includes steps such as configuring the server, installing necessary software dependencies, deploying the application code, and ensuring proper connectivity with the database. This section may also cover any specific deployment scripts or automation tools used to streamline the deployment process.

Here's an elaboration on the deployment process for the e-Krishi Connect portal:

5.1.1 Environment Setup

1. **Server Provisioning**: Acquire a dedicated or cloud-based server to host the e-Krishi Connect portal.
2. **Operating System**: Install a suitable operating system such as Linux (e.g., Ubuntu, CentOS) on the server.
3. **Web Server**: Install a web server software like Apache or Nginx to serve the web application.
4. **Database Server**: Set up a database server (MySQL) to store application data.
5. **PHP Installation**: Install PHP along with necessary extensions and modules required for the application.

5.1.2 Code Review and Quality Assurance

1. **Code Review**: Conduct a thorough code review to ensure code quality, adherence to coding standards, and best practices.
2. **Testing**: Perform unit testing to validate individual components and functionality of the application.
3. **Static Code Analysis**: Run static code analysis tools to identify any potential code issues or vulnerabilities.

5.1.3 Configuration Management

1. **Configuration Files**: Organize configuration files for the web server, database connection, and other application settings.

2. **Environment Variables**: Utilize environment variables to manage sensitive information such as database credentials and API keys securely.
3. **Version Control**: Use a version control system like Git to manage and track changes to the application code.

5.1.4 Continuous Integration and Continuous Deployment (CI/CD)

1. **CI/CD Pipeline Setup**: Implement a CI/CD pipeline using tools like Jenkins, GitLab CI, or GitHub Actions to automate the build, test, and deployment processes.
2. **Automated Builds**: Configure automated builds to compile the PHP code, process assets (HTML, CSS, JS), and generate deployment artifacts.
3. **Automated Tests**: Run automated tests, including unit tests and integration tests, to verify the correctness and functionality of the application.
4. **Deployment Automation**: Automate deployment tasks such as copying files to the server, updating configuration files, and restarting services.

5.1.5 Database Migration

1. **Schema Changes**: If there are any database schema changes or migrations, create migration scripts using tools like Laravel Migrations or Doctrine Migrations.
2. **Data Migration**: Plan and execute data migration scripts to transfer existing data to the production database without data loss or corruption.

5.1.6 Load Balancing and Scalability

1. **Load Balancer Configuration**: Configure a load balancer (e.g., HAProxy, Nginx) to distribute incoming traffic across multiple web servers for load balancing and high availability.
2. **Scaling Strategy**: Implement horizontal scaling by adding more web server instances to handle increased traffic or load spikes.

5.1.7 Security Measures

1. **HTTPS Configuration**: Enable HTTPS to encrypt communication between the web server and clients using SSL/TLS certificates.

2. **Security Headers**: Configure security headers (e.g., Content Security Policy, X-Frame-Options) to protect against common web vulnerabilities.
3. **Firewall Rules**: Set up firewall rules to restrict access to the server and prevent unauthorized access.
4. **Regular Security Audits**: Conduct regular security audits and vulnerability scans to identify and mitigate security risks.

5.1.8 Monitoring and Logging

1. **Monitoring Tools**: Install monitoring tools like Prometheus, Grafana, or Nagios to monitor server metrics, application performance, and resource utilization.
2. **Logging Configuration**: Configure logging for the web server, application, and database to capture important events, errors, and user activities for troubleshooting and analysis.

5.1.9 Disaster Recovery and Backup

1. **Backup Strategy**: Implement a backup strategy to regularly back up application data, configuration files, and server configurations.
2. **Off-site Backup Storage**: Store backups securely in off-site locations or cloud storage services to ensure data redundancy and disaster recovery capabilities.

5.2 Testing Strategy

Testing is a crucial aspect of software development to ensure that the e-Krishi Connect portal functions correctly, meets user requirements, and delivers a seamless user experience. The testing strategy encompasses multiple levels of testing, including unit testing, integration testing, and system testing.

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5.2.1 Unit Testing

Overview:

Unit testing focuses on testing individual components or units of the e-Krishi Connect portal in isolation. The goal is to verify that each unit functions as expected and produces the correct output for a given input.

Approach:

1. **Identify Units:** Identify the smallest testable parts of the codebase, such as functions, methods, or classes.
2. **Write Test Cases:** Develop test cases for each unit to cover various scenarios, including normal inputs, boundary conditions, and error cases.
3. **Use Testing Framework:** Utilize a testing framework such as PHPUnit for PHP code to automate the execution of unit tests and generate test reports.
4. **Execute Tests:** Run the unit tests regularly as part of the development process to catch defects early and ensure code quality.

5. **Refactor Code:** Refactor the code as needed to improve testability and maintainability based on the feedback from unit tests.

5.2.2 Integration Testing

Overview:

Integration testing verifies the interactions and data flow between different modules or subsystems of the e-Krishi Connect portal. It ensures that the integrated components work together seamlessly as a unified system.

Approach:

1. **Identify Integration Points:** Identify the interfaces and dependencies between modules or subsystems that need to be tested.
2. **Develop Test Scenarios:** Define test scenarios that cover various integration points, including data exchange, function calls, and communication protocols.
3. **Create Test Data:** Prepare test data and mock objects to simulate the behavior of external dependencies and isolate the components under test.
4. **Execute Tests:** Execute integration tests to validate the interactions between components and detect any compatibility issues or integration errors.
5. **Monitor Results:** Monitor test results and analyze any failures or discrepancies to identify root causes and address them promptly.

5.2.3 System Testing

Overview:

System testing evaluates the entire e-Krishi Connect portal as a whole to validate its functionality, performance, and reliability in a production-like environment. It aims to verify that the system meets the specified requirements and fulfills user expectations.

Approach:

1. **Define Test Scenarios:** Define comprehensive test scenarios that cover all functional and non-functional requirements of the e-Krishi Connect portal, including user interactions, data processing, security features, and performance benchmarks.
2. **Prepare Test Environment:** Set up a dedicated testing environment that closely resembles the production environment, including servers, databases, and network configurations.
3. **Execute Test Cases:** Execute test cases systematically to validate different aspects of the system, such as user authentication, data validation, workflow processes, and error handling.
4. **Perform Regression Testing:** Conduct regression testing to ensure that recent changes or enhancements do not introduce new defects or regressions in existing functionality.
5. **Gather Feedback:** Gather feedback from stakeholders, end-users, and testing teams to identify areas for improvement and prioritize any necessary refinements or enhancements.

6. Results and Discussion

Sure, here's a detailed outline for the "Results and Discussion" section of the project report:

6. Results and Discussion

6.1 System Evaluation

This section evaluates the performance and effectiveness of the e-Krishi Connect portal based on predefined criteria and metrics. It includes an analysis of key performance indicators (KPIs), user feedback, and system metrics to assess the success of the project in meeting its objectives.

- **Performance Metrics:** Evaluate system performance in terms of response times, throughput, and resource utilization.
- **User Satisfaction:** Gather feedback from end-users to assess their satisfaction levels with the portal's usability, functionality, and overall experience.
- **System Reliability:** Measure system uptime, availability, and error rates to evaluate reliability and stability.
- **Security Assessment:** Conduct security assessments and audits to identify vulnerabilities and ensure data protection and privacy compliance.

6.2 Challenges Faced and Solutions Implemented

This section discusses the challenges encountered during the development and implementation of the e-Krishi Connect portal and the strategies or solutions implemented to overcome them. It provides insights into the obstacles faced and the lessons learned throughout the project lifecycle.

- **Technical Challenges:** Identify technical hurdles such as software limitations, compatibility issues, or performance bottlenecks, and describe how they were addressed.
- **Resource Constraints:** Discuss any resource constraints such as time, budget, or manpower limitations, and outline strategies for resource optimization and management.

- **Stakeholder Engagement:** Address challenges related to stakeholder communication, collaboration, and alignment of expectations, and highlight methods for fostering effective stakeholder engagement.

6.3 Future Enhancements

This section explores potential areas for future enhancements and development opportunities for the e-Krishi Connect portal. It includes a discussion on feature enhancements, technology upgrades, and strategic initiatives to further improve the portal's functionality, scalability, and value proposition.

6.3.1 Integration of Machine Learning for Farmer Feedback Analysis

One of the key areas for future enhancement involves leveraging machine learning (ML) techniques to analyze farmer feedback effectively. By harnessing the power of ML algorithms, the e-Krishi Connect portal can gain valuable insights from the feedback provided by farmers, enabling more informed decision-making and proactive problem-solving.

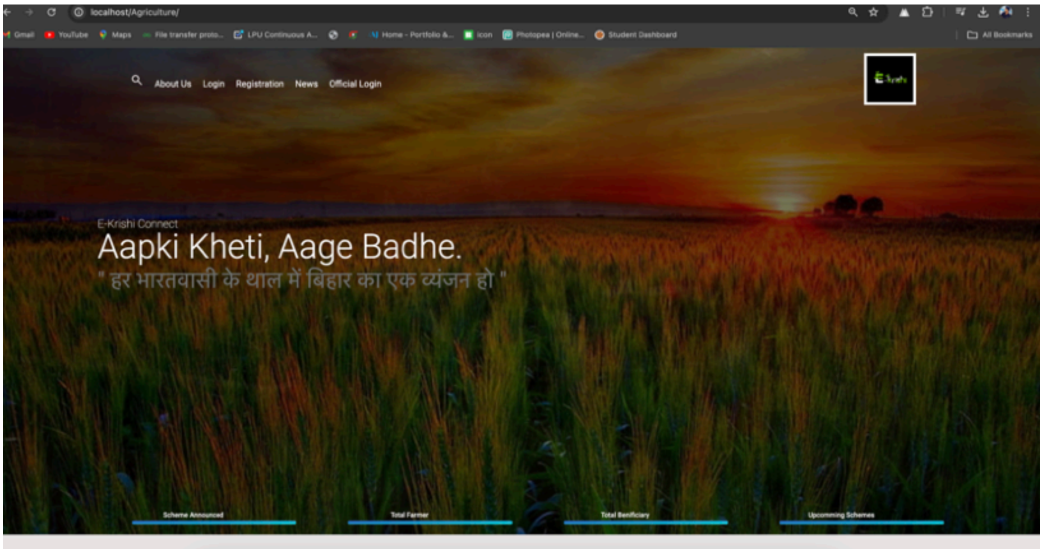
- **Sentiment Analysis:** Implement sentiment analysis algorithms to categorise farmer feedback into positive, negative, or neutral sentiments. This analysis can help identify areas of improvement and prioritize issues based on their impact on farmer satisfaction.
- **Topic Modelling:** Utilise topic modelling techniques such as Latent Dirichlet Allocation (LDA) or Non-Negative Matrix Factorisation (NMF) to identify common themes and topics within farmer feedback. This approach can aid in identifying recurring issues or emerging trends that require attention.
- **Predictive Analytics:** Explore predictive analytics models to anticipate future farmer needs and preferences based on historical feedback data. By predicting potential challenges or opportunities, the portal can proactively address farmer concerns and deliver tailored solutions.

6.3.2 Location-Based Auto Verification System by Department

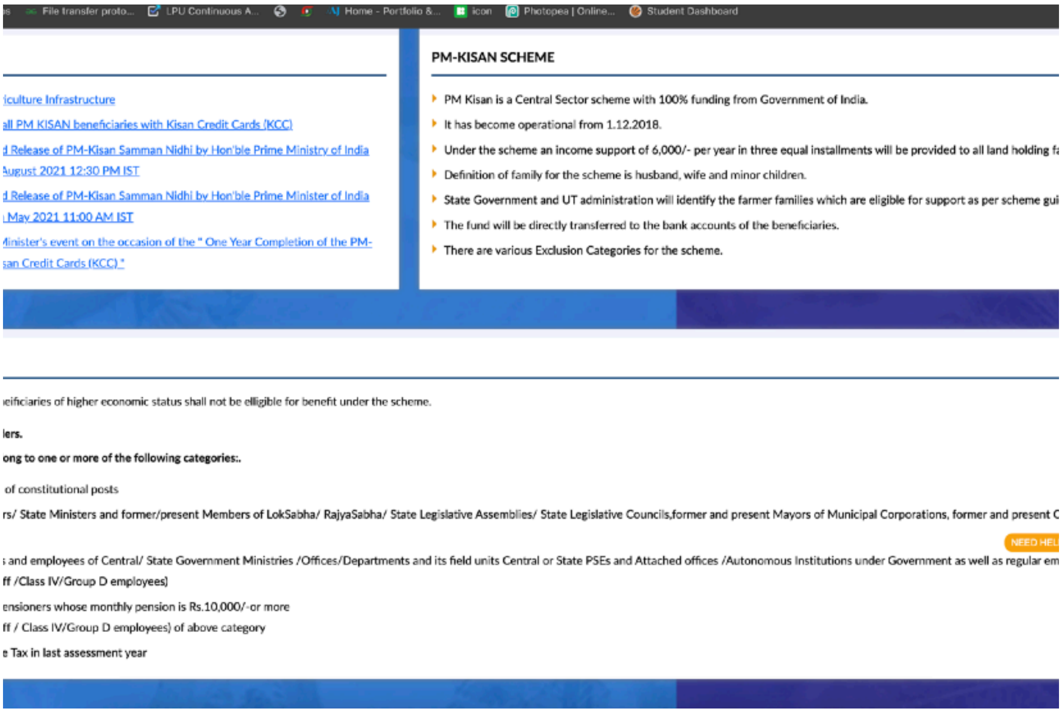
Another promising avenue for enhancement is the implementation of a location-based auto verification system by department. This system aims to streamline the verification process for government schemes and services by leveraging geospatial data and automated verification mechanisms.

- **Geospatial Data Integration:** Integrate geospatial data sources such as GPS coordinates, maps, and spatial databases to accurately identify the location of farmers and government facilities. This integration enables precise geolocation-based verification of farmer eligibility and service delivery.
- **Machine Learning Models for Verification:** Develop machine learning models to automate the verification process based on location data and predefined criteria. These models can analyze spatial patterns, historical data, and contextual information to verify farmer eligibility for specific schemes or services.
- **Real-Time Verification:** Implement real-time verification mechanisms that leverage location data and mobile technologies to verify farmer eligibility and authenticate transactions on the go. This approach reduces manual intervention and improves the efficiency of service delivery.

7. User Interface



Home Page



iculture Infrastructure

all PM KISAN beneficiaries with Kisan Credit Cards (KCC)

d Release of PM-Kisan Samman Nidhi by Hon'ble Prime Ministry of India August 2021 12:30 PM IST

d Release of PM-Kisan Samman Nidhi by Hon'ble Prime Minister of India May 2021 11:00 AM IST

Minister's event on the occasion of the " One Year Completion of the PM-san Credit Cards (KCC) "

PM-KISAN SCHEME

- PM Kisan is a Central Sector scheme with 100% funding from Government of India.
- It has become operational from 1.12.2018.
- Under the scheme an income support of 6,000/- per year in three equal installments will be provided to all land holding fa
- Definition of family for the scheme is husband, wife and minor children.
- State Government and UT administration will identify the farmer families which are eligible for support as per scheme gui
- The fund will be directly transferred to the bank accounts of the beneficiaries.
- There are various Exclusion Categories for the scheme.

eificiaries of higher economic status shall not be elligible for benefit under the scheme.

lers.

ong to one or more of the following categories:.

of constitutional posts

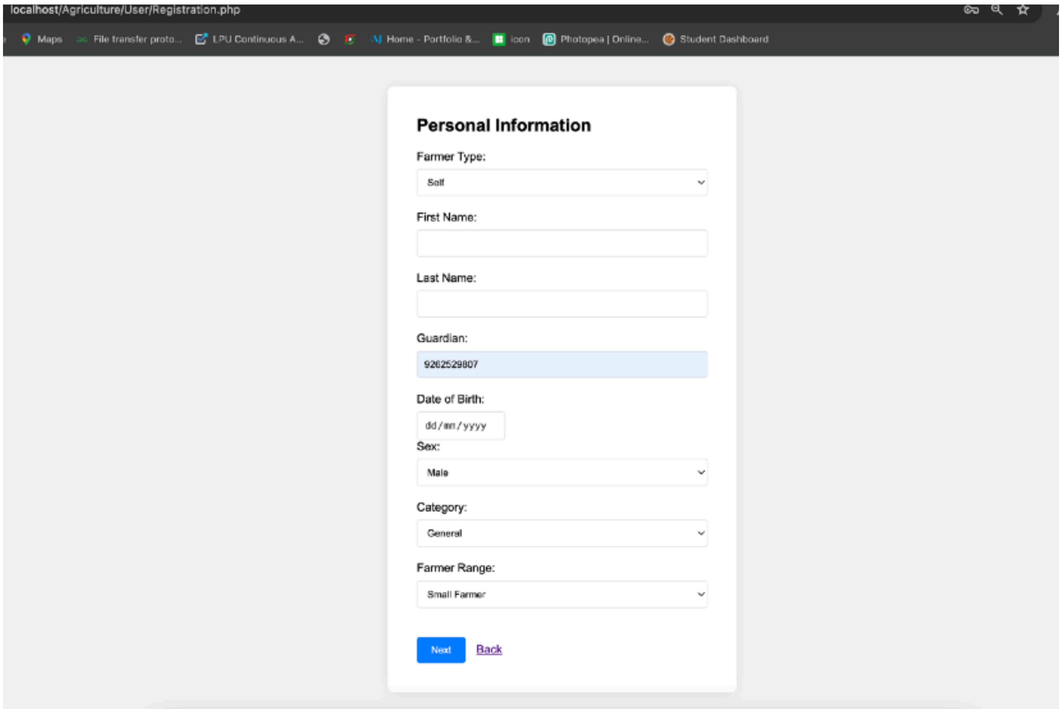
rs/ State Ministers and former/present Members of LokSabha/ RajyaSabha/ State Legislative Assemblies/ State Legislative Councils,former and present Mayors of Municipal Corporations, former and present C

s and employees of Central/ State Government Ministries /Offices/Departments and its field units Central or State PSEs and Attached offices /Autonomous Institutions under Government as well as regular em
ff /Class IV/Group D employees)

ensioners whose monthly pension is Rs.10,000/-or more
ff / Class IV/Group D employees) of above category

e Tax in last assessment year

Home page



Personal Information

Farmer Type: Self

First Name:

Last Name:

Guardian: 9262529807

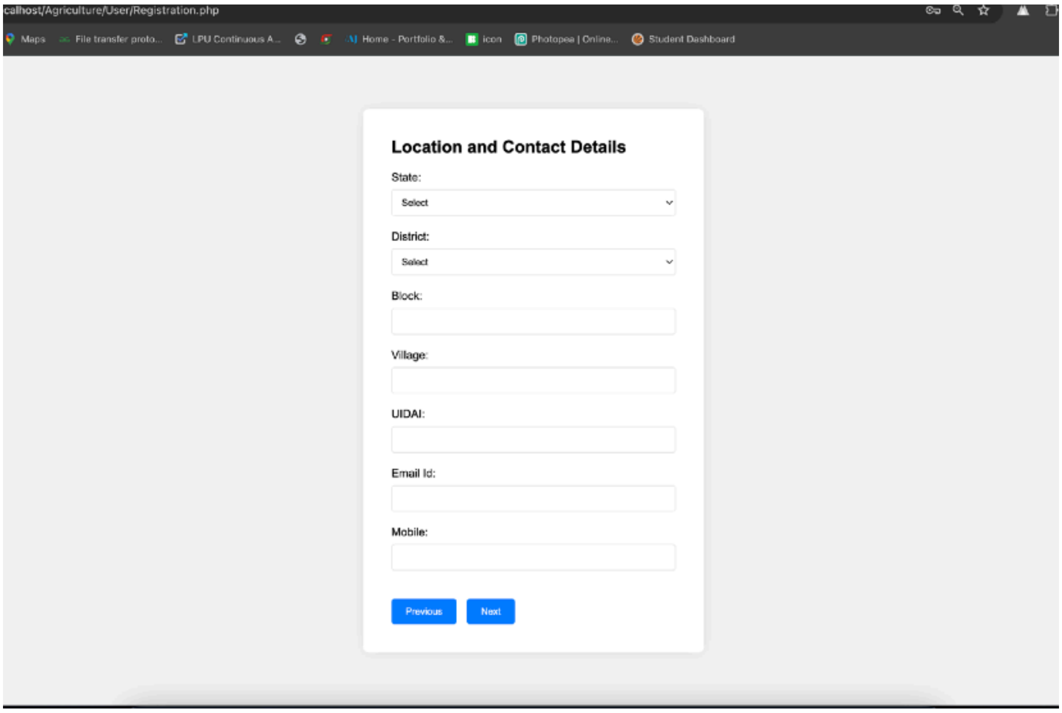
Date of Birth: dd/mm/yyyy

Sex: Male

Category: General

Farmer Range: Small Farmer

Farmer Registration Page



Location and Contact Details

State: Select

District: Select

Block:

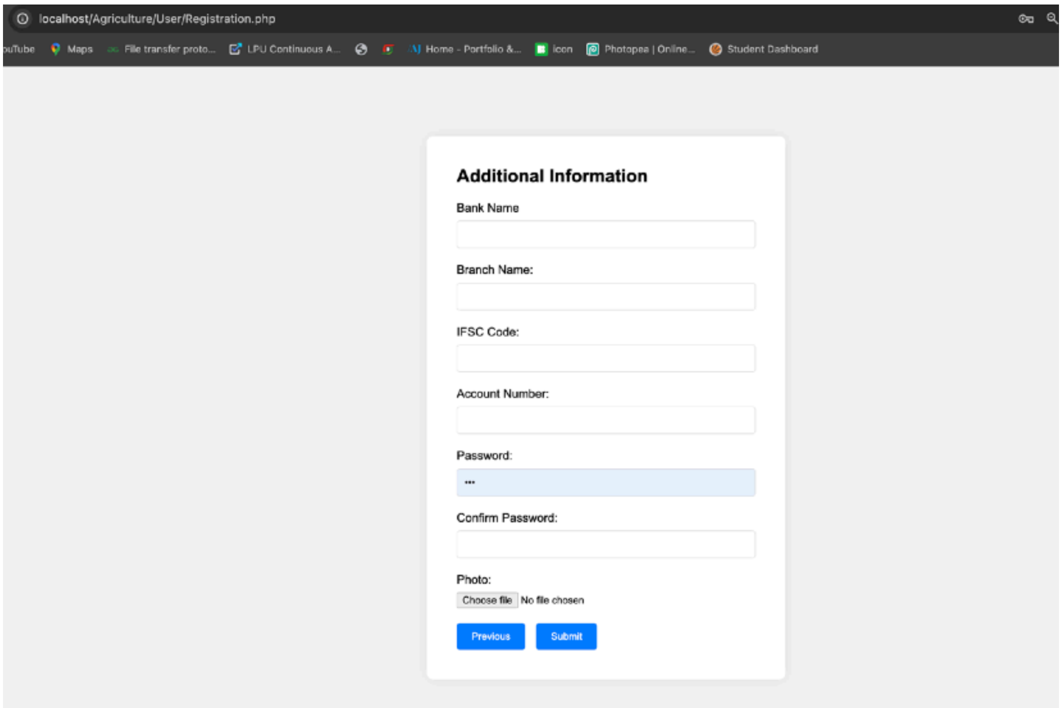
Village:

UIDAI:

Email Id:

Mobile:

Registration



Additional Information

Bank Name

Branch Name:

IFSC Code:

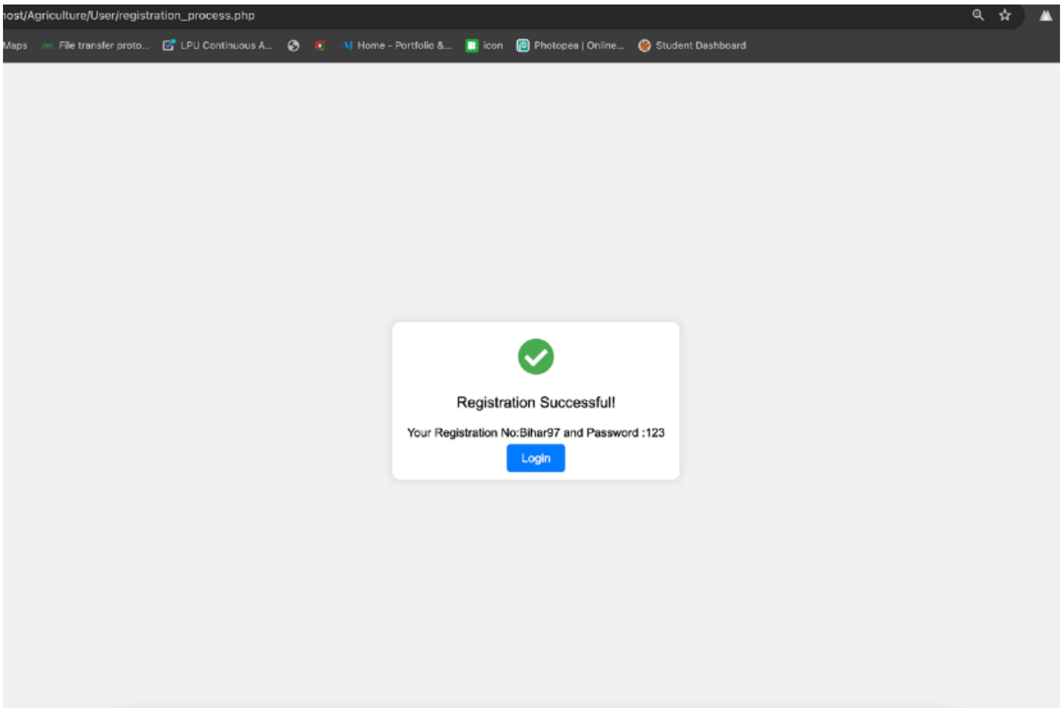
Account Number:

Password: •••

Confirm Password:

Photo: No file chosen

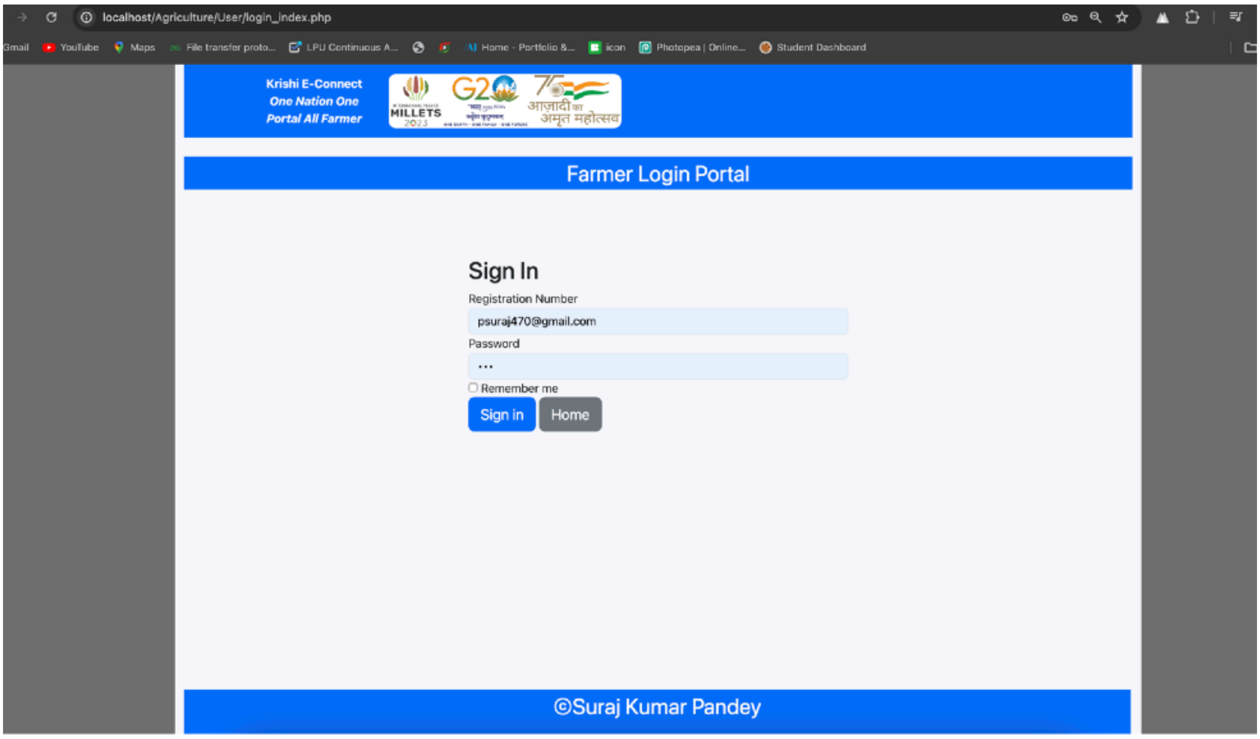
Registration page



Registration Successful!

Your Registration No:Bihar97 and Password :123

Registration confirmation message



Farmer Login Portal

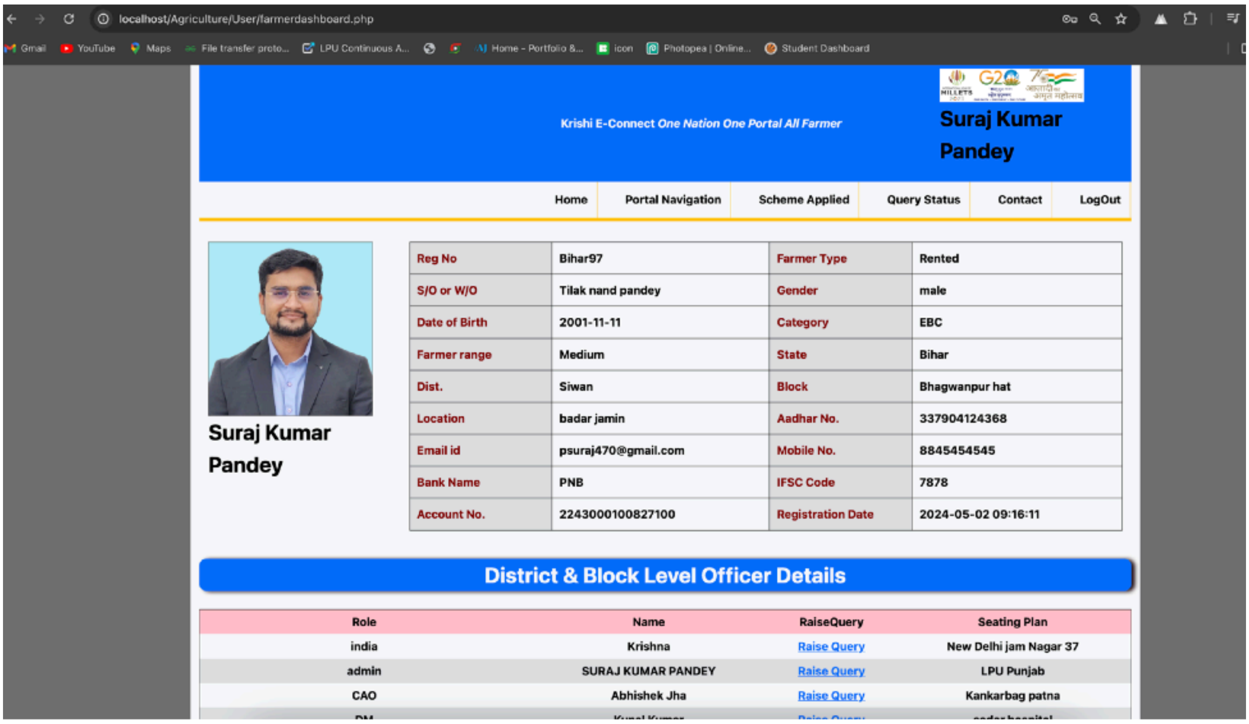
Sign In

Registration Number: psuraj470@gmail.com

Password: •••

□ Remember me

Farmer Login page

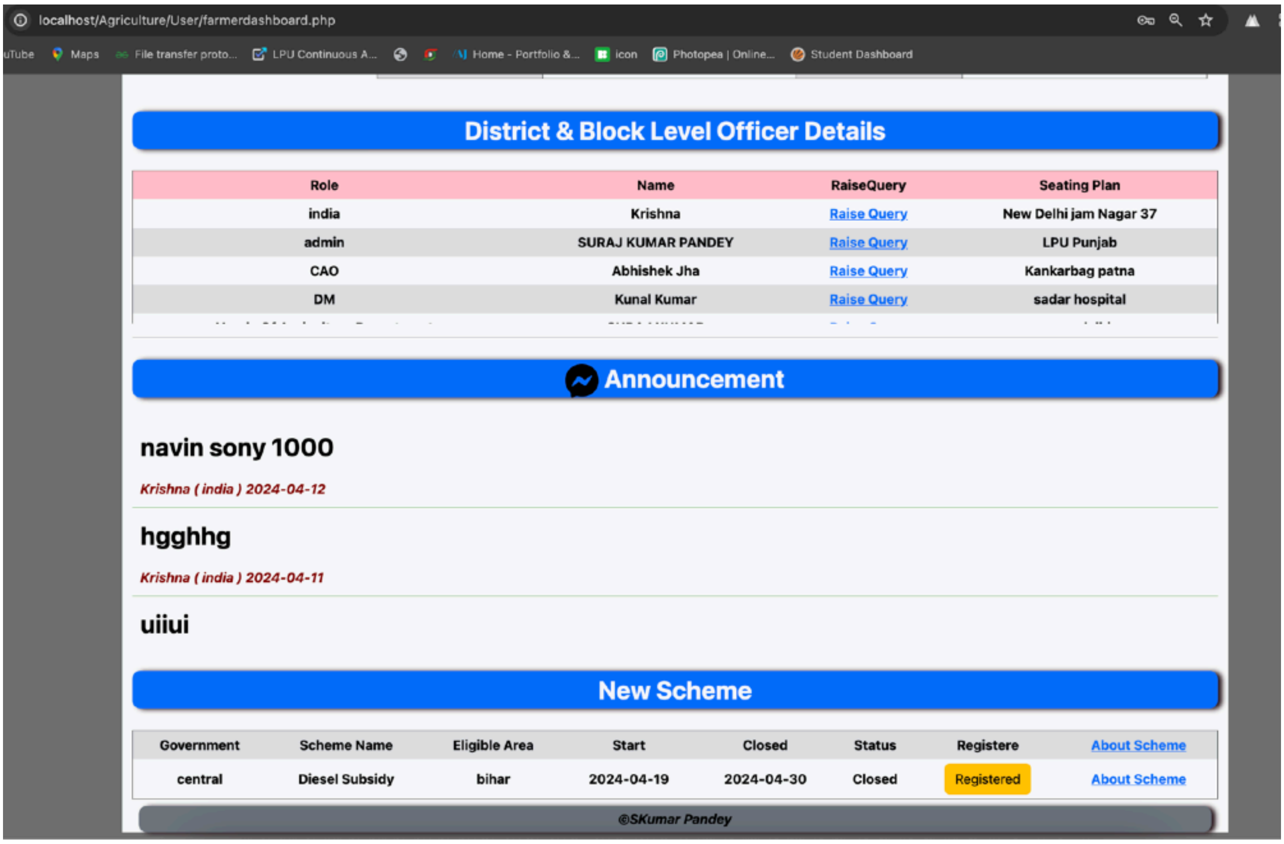


Reg No	Bihar97	Farmer Type	Rented
S/O or W/O	Tilak nand pandey	Gender	male
Date of Birth	2001-11-11	Category	EBC
Farmer range	Medium	State	Bihar
Dist.	Siwan	Block	Bhagwanpur hat
Location	badar jamin	Aadhar No.	337904124368
Email id	psuraj470@gmail.com	Mobile No.	8845454545
Bank Name	PNB	IFSC Code	7878
Account No.	2243000100827100	Registration Date	2024-05-02 09:16:11

District & Block Level Officer Details

Role	Name	RaiseQuery	Seating Plan
india	Krishna	Raise Query	New Delhi jam Nagar 37
admin	SURAJ KUMAR PANDEY	Raise Query	LPU Punjab
CAO	Abhishek Jha	Raise Query	Kankarbag patna
DM	Kunal Kumar	Raise Query	sadar hospital

Farmer dashboard



District & Block Level Officer Details

Role	Name	RaiseQuery	Seating Plan
india	Krishna	Raise Query	New Delhi jam Nagar 37
admin	SURAJ KUMAR PANDEY	Raise Query	LPU Punjab
CAO	Abhishek Jha	Raise Query	Kankarbag patna
DM	Kunal Kumar	Raise Query	sadar hospital

Announcement

navin sony 1000

Krishna (india) 2024-04-12

hgghhg

Krishna (india) 2024-04-11

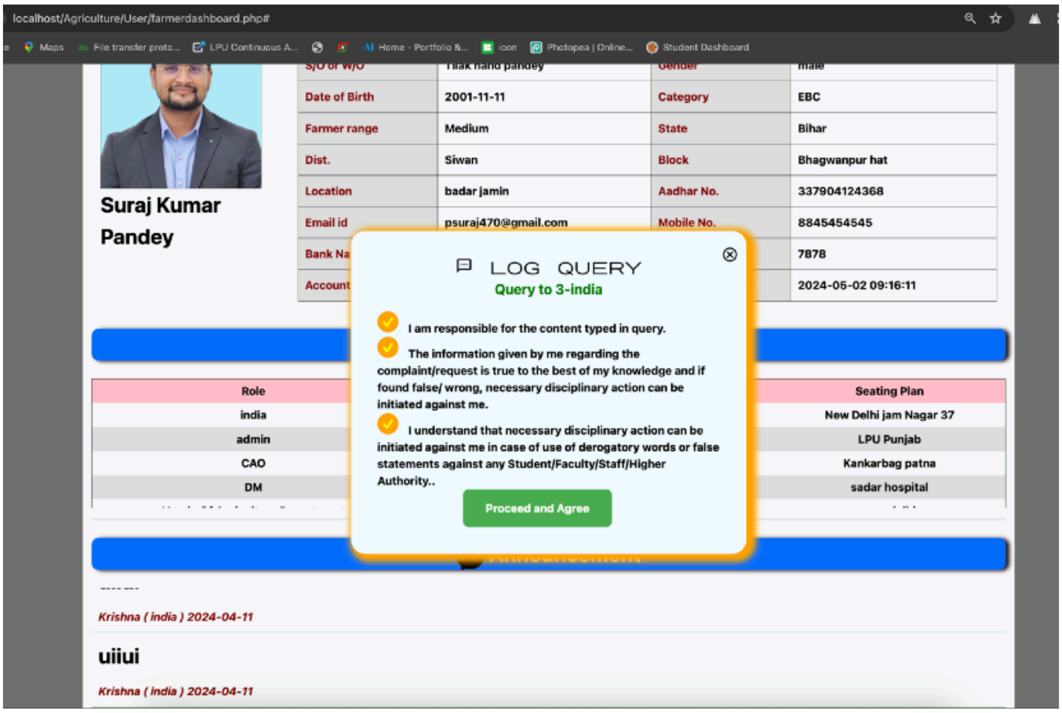
uiiui

New Scheme

Government	Scheme Name	Eligible Area	Start	Closed	Status	Registere	About Scheme
central	Diesel Subsidy	bihar	2024-04-19	2024-04-30	Closed	Registered	About Scheme

©SKumar Pandey

Farmer Dashboard



Suraj Kumar Pandey

S/O or W/O	Tilak nand pandey	Gender	male
Date of Birth	2001-11-11	Category	EBC
Farmer range	Medium	State	Bihar
Dist.	Siwan	Block	Bhagwanpur hat
Location	badar jamin	Aadhar No.	337904124368
Email id	psuraj470@gmail.com	Mobile No.	8845454545
Bank Na			7878
Account			2024-05-02 09:16:11

LOG QUERY

Query to 3-india

✓ I am responsible for the content typed in query.

✓ The information given by me regarding the complaint/request is true to the best of my knowledge and if found false/ wrong, necessary disciplinary action can be initiated against me.

✓ I understand that necessary disciplinary action can be initiated against me in case of use of derogatory words or false statements against any Student/Faculty/Staff/Higher Authority..

Proceed and Agree

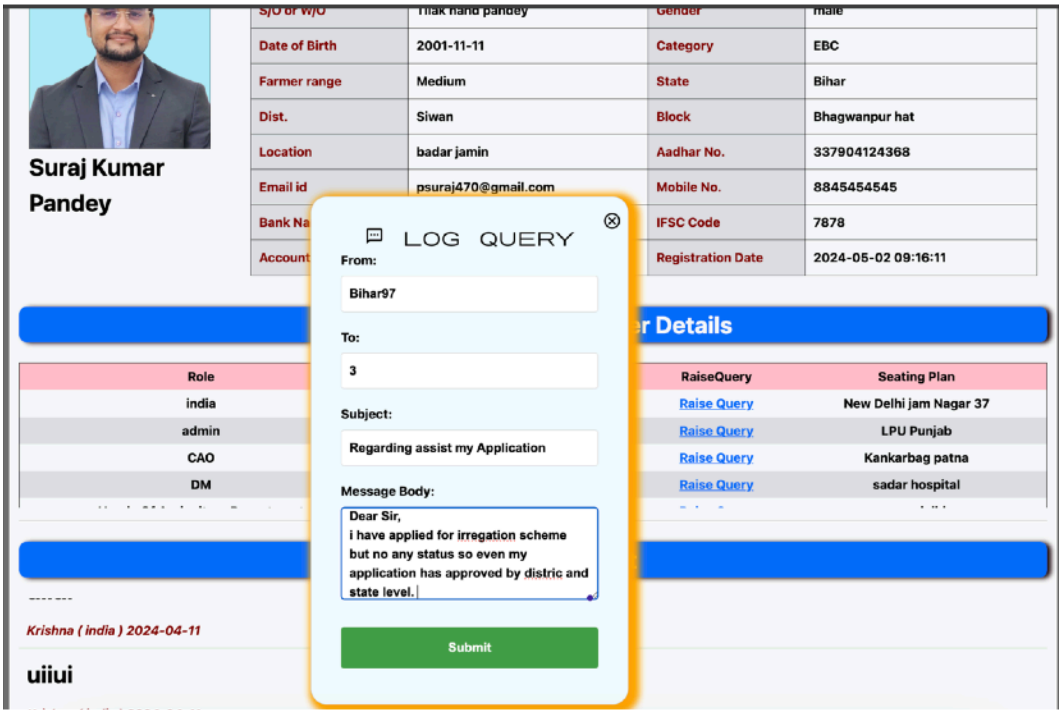
Role	Seating Plan
india	New Delhi jam Nagar 37
admin	LPU Punjab
CAO	Kankarbag patna
DM	sadar hospital

Krishna (india) 2024-04-11

uiiui

Krishna (india) 2024-04-11

Query Instruction



Suraj Kumar Pandey

S/O or W/O	Tilak nand pandey	Gender	male
Date of Birth	2001-11-11	Category	EBC
Farmer range	Medium	State	Bihar
Dist.	Siwan	Block	Bhagwanpur hat
Location	badar jamin	Aadhar No.	337904124368
Email id	psuraj470@gmail.com	Mobile No.	8845454545
Bank Na		IFSC Code	7878
Account		Registration Date	2024-05-02 09:16:11

Role	RaiseQuery	Seating Plan
india	Raise Query	New Delhi jam Nagar 37
admin	Raise Query	LPU Punjab
CAO	Raise Query	Kankarbag patna
DM	Raise Query	sadar hospital

--- ---

Krishna (india) 2024-04-11

uiiui

LOG QUERY

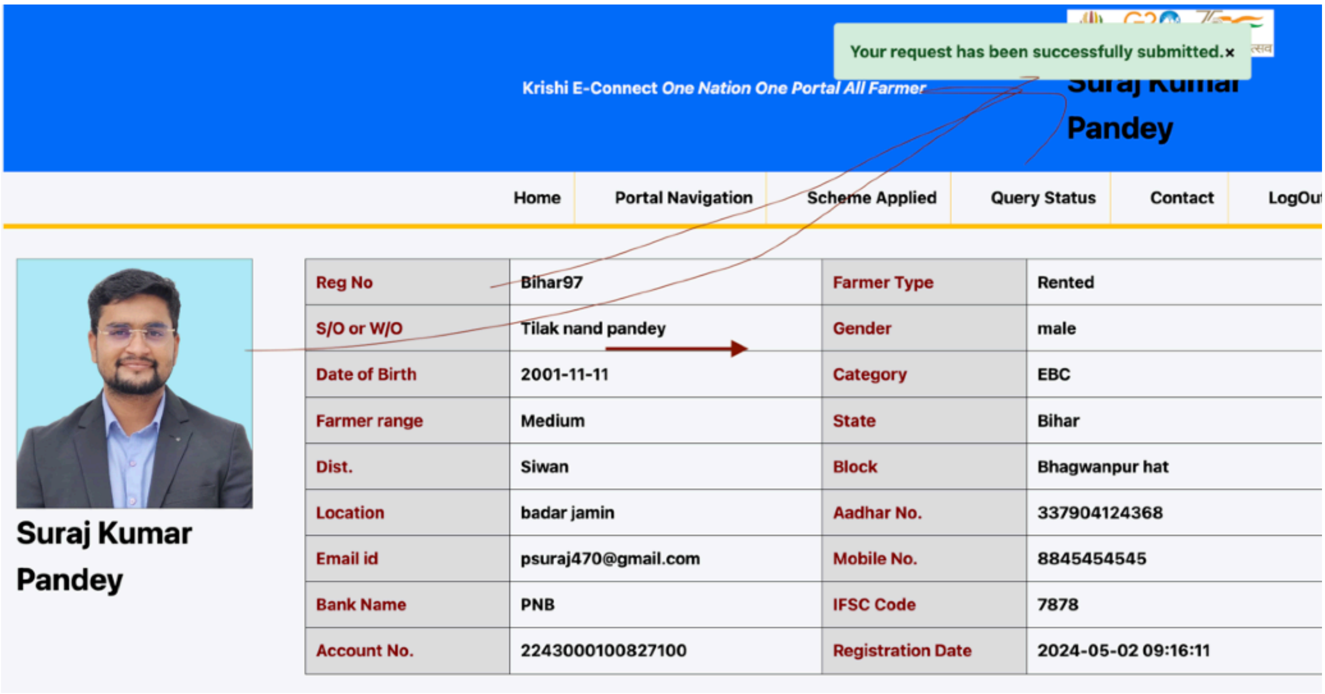
From: Bihar97

To: 3

Subject: Regarding assist my Application

Message Body:
Dear Sir,
i have applied for irregation scheme but no any status so even my application has approved by distric and state level.

Raise Query

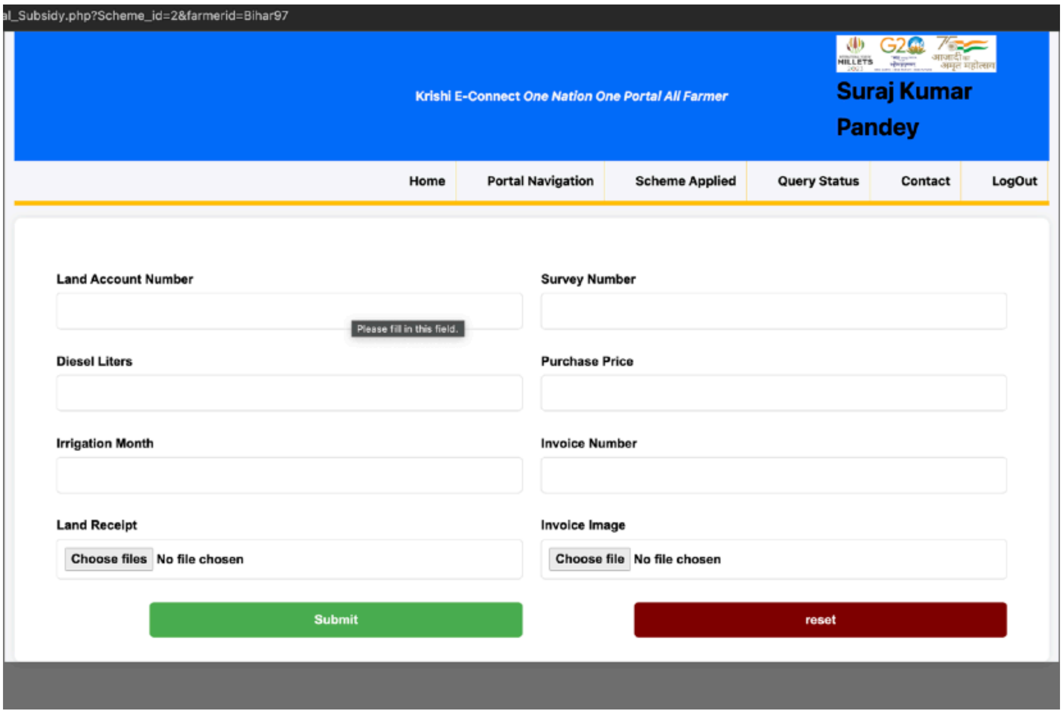


Your request has been successfully submitted. ×

Suraj Kumar Pandey

Reg No	Bihar97	Farmer Type	Rented
S/O or W/O	Tilak nand pandey	Gender	male
Date of Birth	2001-11-11	Category	EBC
Farmer range	Medium	State	Bihar
Dist.	Siwan	Block	Bhagwanpur hat
Location	badar jamin	Aadhar No.	337904124368
Email id	psuraj470@gmail.com	Mobile No.	8845454545
Bank Name	PNB	IFSC Code	7878
Account No.	2243000100827100	Registration Date	2024-05-02 09:16:11

Show response sent success



al_Subsidy.php?Scheme_id=2&farmerid=Bihar97

Krishi E-Connect *One Nation One Portal All Farmer*

Suraj Kumar Pandey

Land Account Number

Please fill in this field.

Survey Number

Diesel Liters

Purchase Price

Irrigation Month

Invoice Number

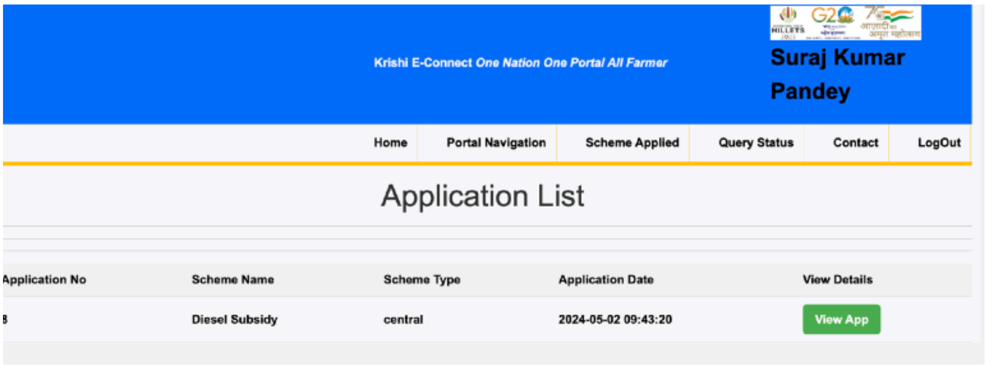
Land Receipt

Choose files No file chosen

Invoice Image

Choose file No file chosen

Scheme apply for Diesel anuran



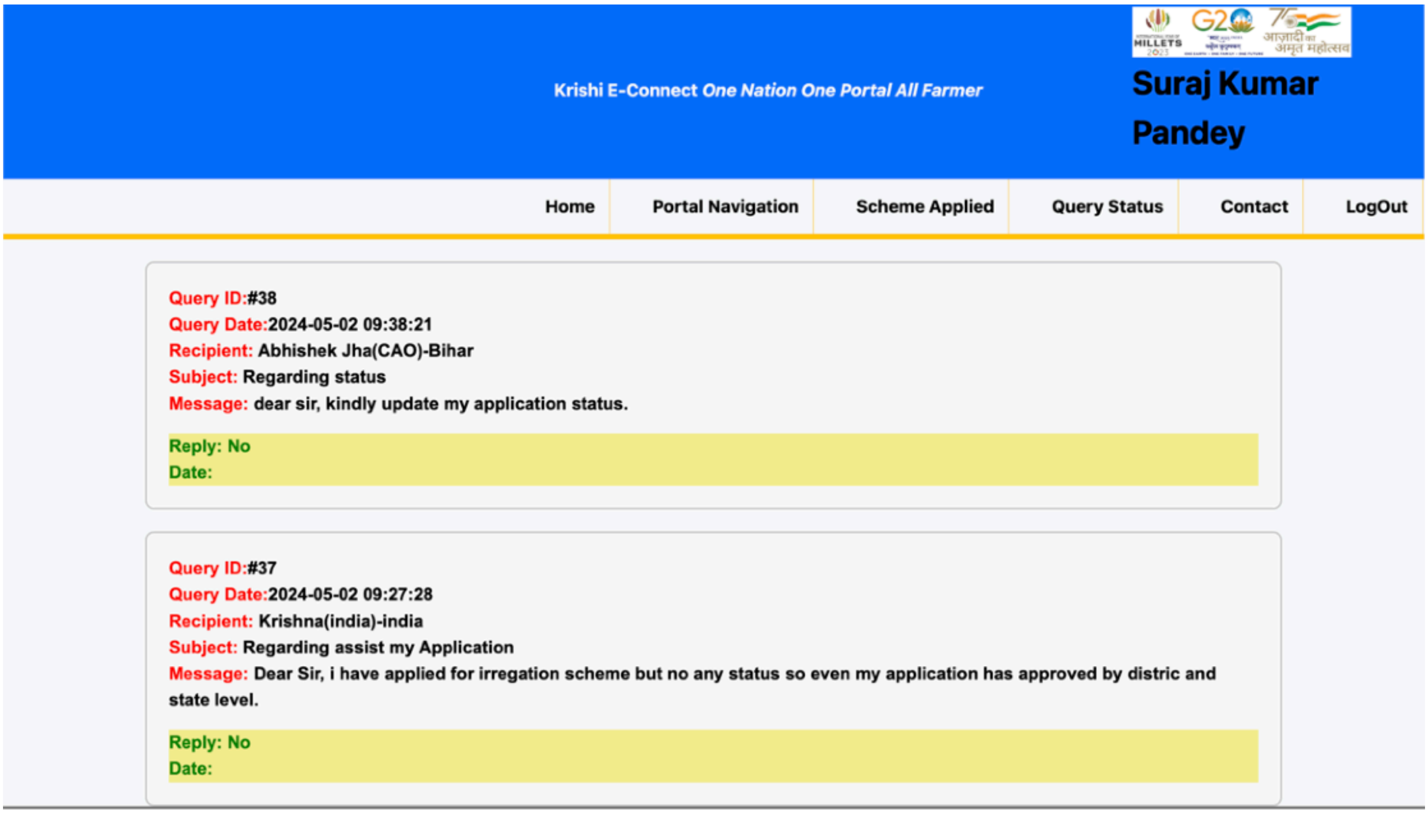
Krishi E-Connect *One Nation One Portal All Farmer*

Suraj Kumar Pandey

Application List

Application No	Scheme Name	Scheme Type	Application Date	View Details
8	Diesel Subsidy	central	2024-05-02 09:43:20	View App

Application list and status



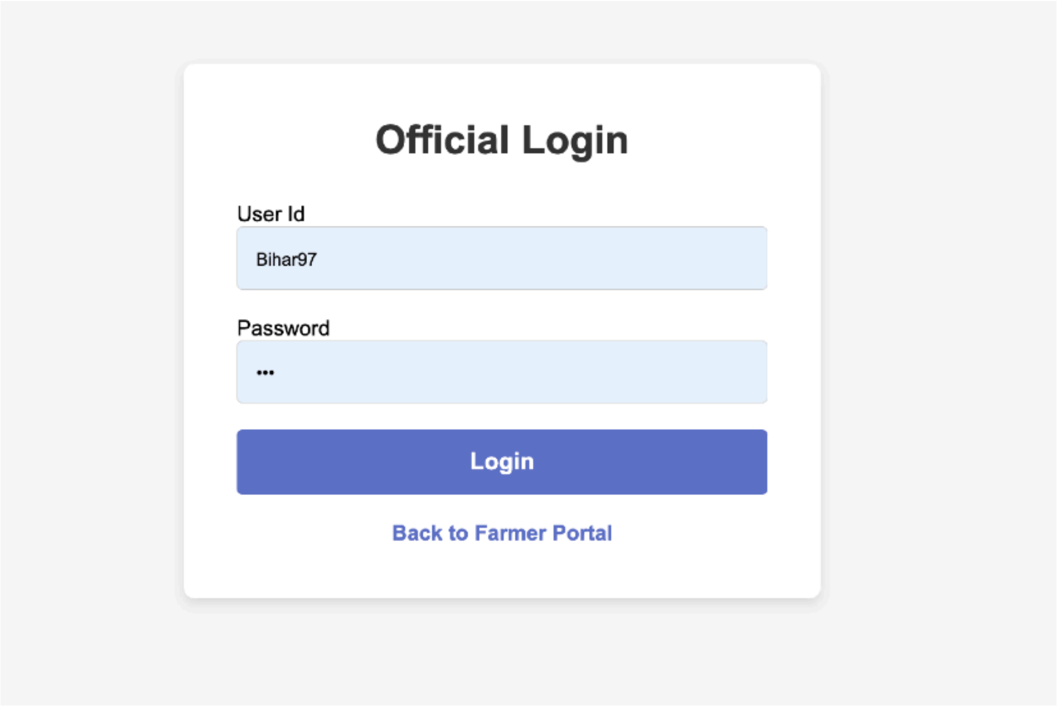
Query ID:#38
Query Date:2024-05-02 09:38:21
Recipient: Abhishek Jha(CAO)-Bihar
Subject: Regarding status
Message: dear sir, kindly update my application status.

Reply: No
Date:

Query ID:#37
Query Date:2024-05-02 09:27:28
Recipient: Krishna(india)-india
Subject: Regarding assist my Application
Message: Dear Sir, i have applied for irregation scheme but no any status so even my application has approved by distric and state level.

Reply: No
Date:

Query status

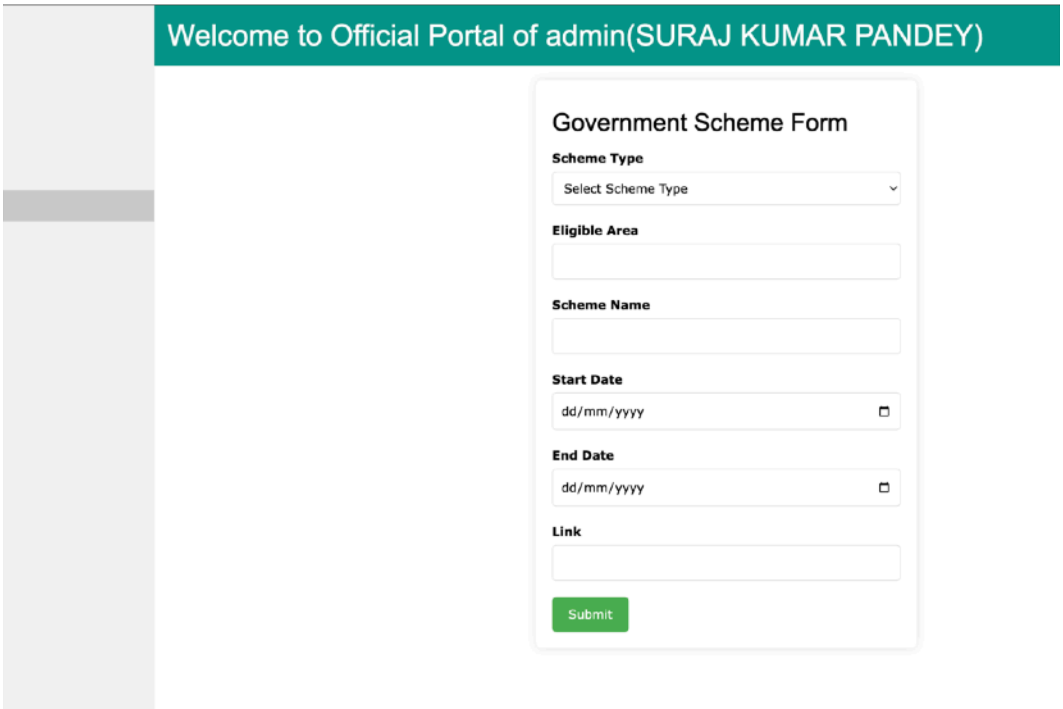


Official Login

User Id: Bihar97

Password: •••

Official Login Portal



Welcome to Official Portal of admin(SURAJ KUMAR PANDEY)

Government Scheme Form

Scheme Type: Select Scheme Type

Eligible Area

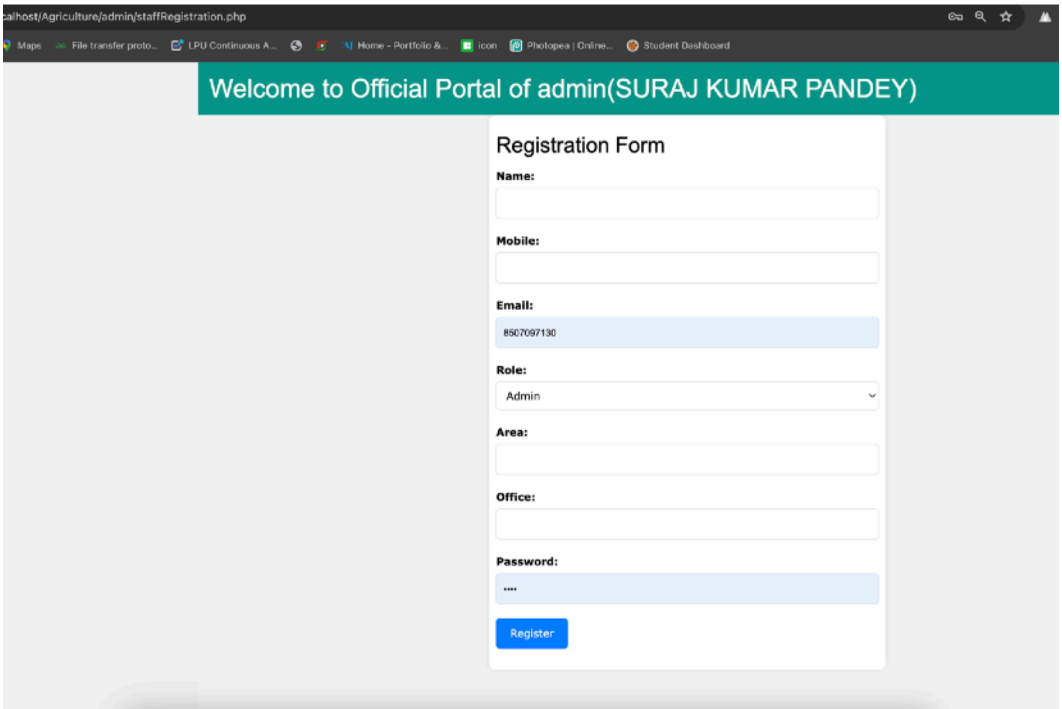
Scheme Name

Start Date: dd/mm/yyyy

End Date: dd/mm/yyyy

Link

Release Scheme by admin



calhost/Agriculture/admin/staffRegistration.php

Welcome to Official Portal of admin(SURAJ KUMAR PANDEY)

Registration Form

Name:

Mobile:

Email: 8507097130

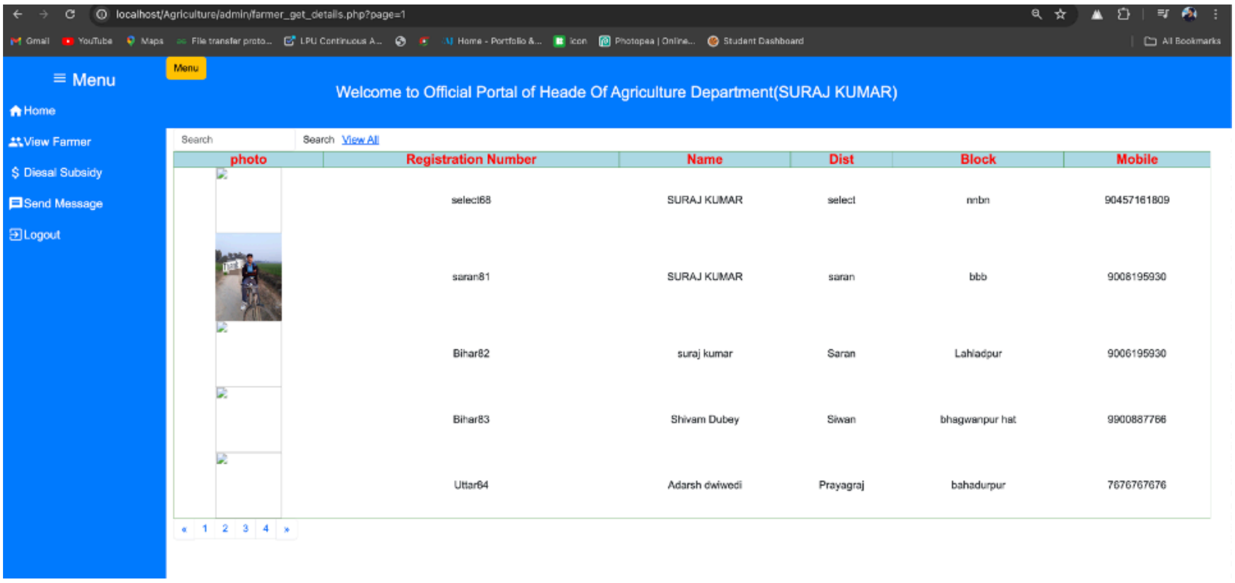
Role: Admin

Area:

Office:

Password: ····

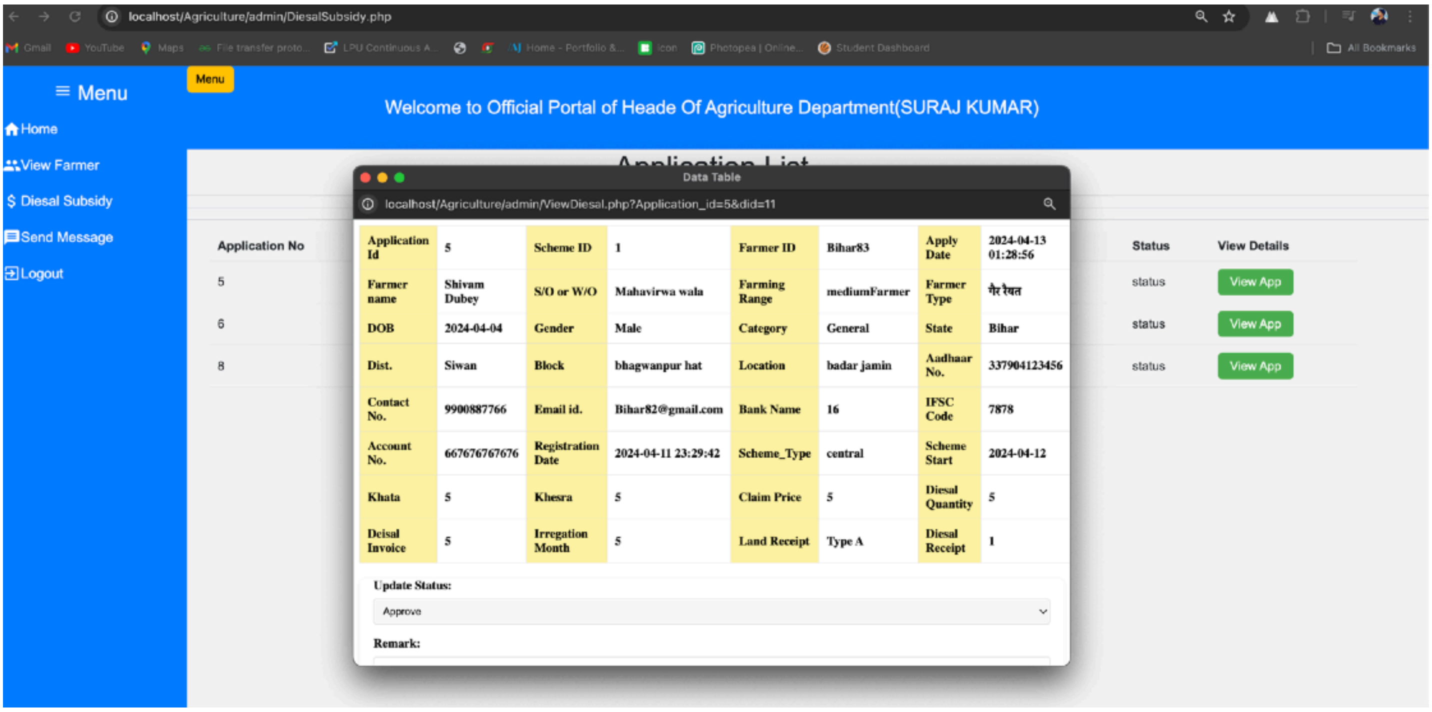
Admin portal for allocate area of officer



Welcome to Official Portal of Heade Of Agriculture Department(SURAJ KUMAR)

photo	Registration Number	Name	Dist	Block	Mobile
	select68	SURAJ KUMAR	select	nnbn	90457161809
	saran81	SURAJ KUMAR	saran	bbb	9008195930
	Bihar82	suraj kumar	Saran	Lahladpur	9006195930
	Bihar83	Shivam Dubey	Siwan	bhagwanpur hat	9900887766
	Uttar84	Adarsh dwiwedi	Prayagraj	bahadurpur	7676767676

Farmer Details



Welcome to Official Portal of Heade Of Agriculture Department(SURAJ KUMAR)

Application No	Status	View Details
5	status	View App
6	status	View App
8	status	View App

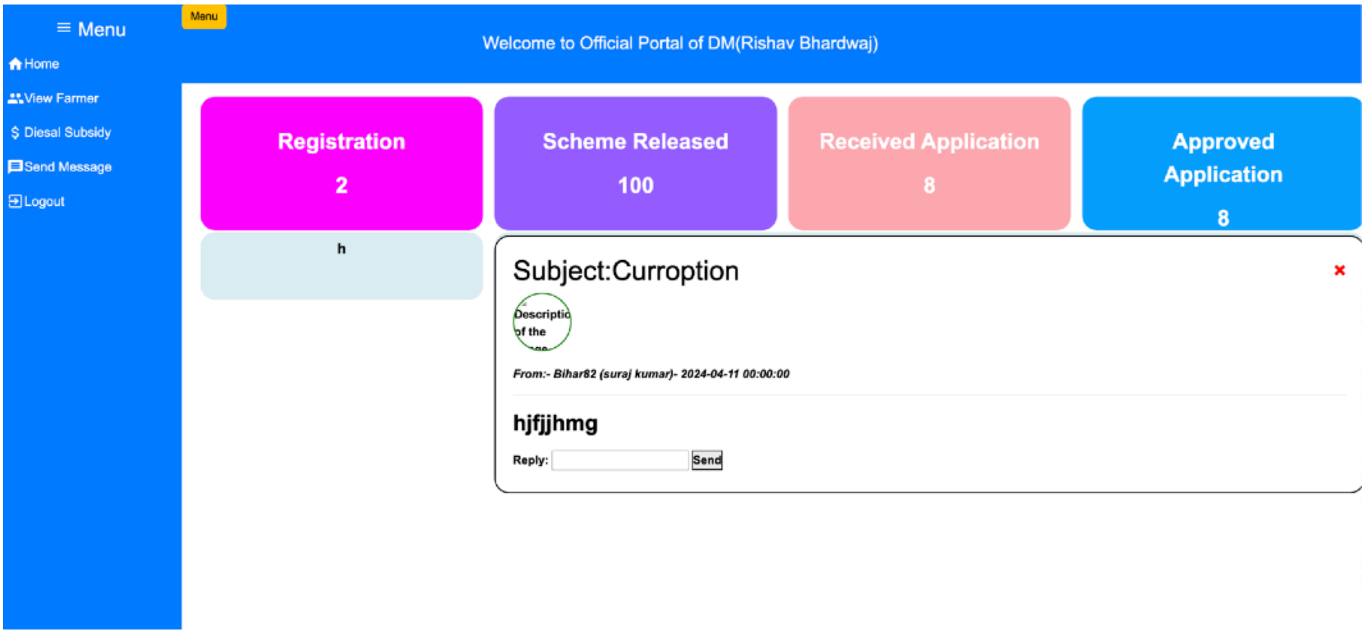
localhost/Agriculture/admin/ViewDiesal.php?Application_id=5&did=11

Application Id	5	Scheme ID	1	Farmer ID	Bihar83	Apply Date	2024-04-13 01:28:56
Farmer name	Shivam Dubey	S/O or W/O	Mahavirwa wala	Farming Range	mediumFarmer	Farmer Type	गैर रैयत
DOB	2024-04-04	Gender	Male	Category	General	State	Bihar
Dist.	Siwan	Block	bhagwanpur hat	Location	badar jamin	Aadhaar No.	337904123456
Contact No.	9900887766	Email id.	Bihar82@gmail.com	Bank Name	16	IFSC Code	7878
Account No.	667676767676	Registration Date	2024-04-11 23:29:42	Scheme_Type	central	Scheme Start	2024-04-12
Khata	5	Khesra	5	Claim Price	5	Diesal Quantity	5
Deisal Invoice	5	Irregation Month	5	Land Receipt	Type A	Diesal Receipt	1

Update Status: Approve

Remark:

Update Application status by respective authorities



Welcome to Official Portal of DM(Rishav Bhardwaj)

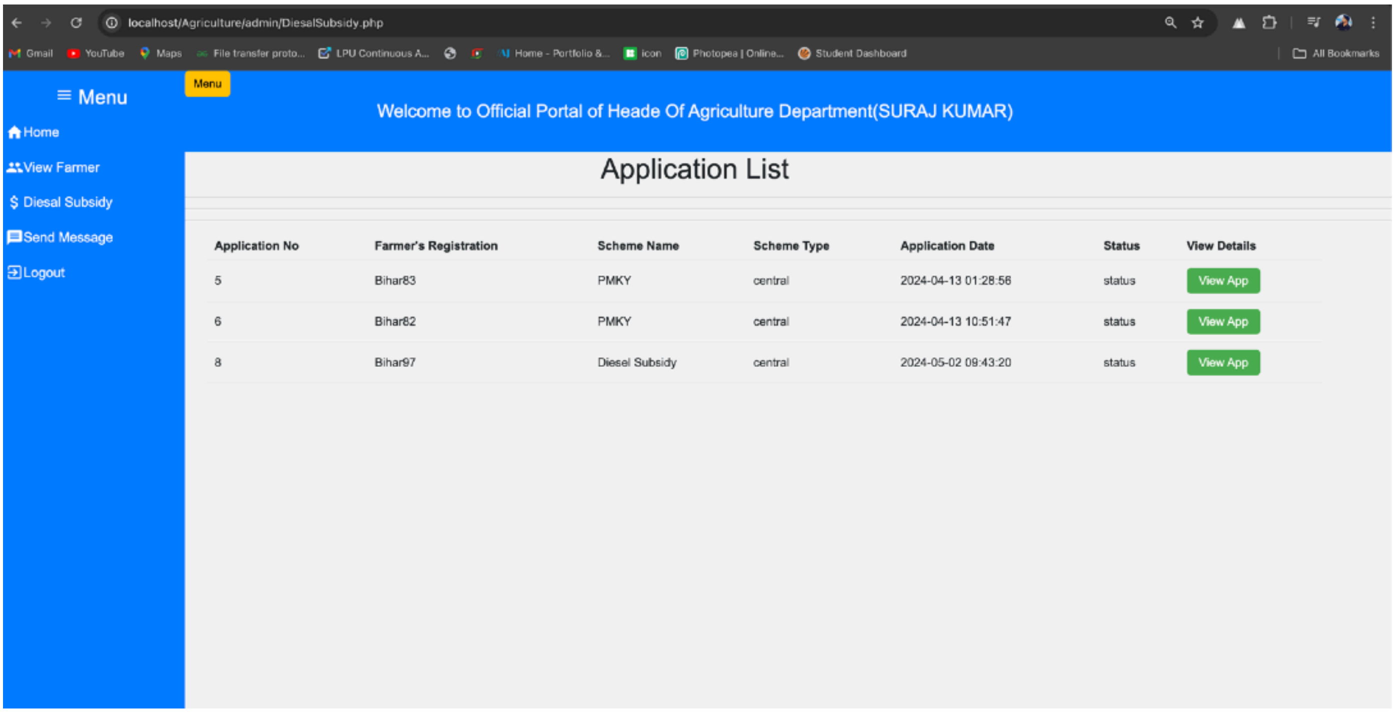
Subject:Curroption

From:- Bihar82 (suraj kumar)- 2024-04-11 00:00:00

hjfjjhmg

Reply:

Official dashboard and query inbox

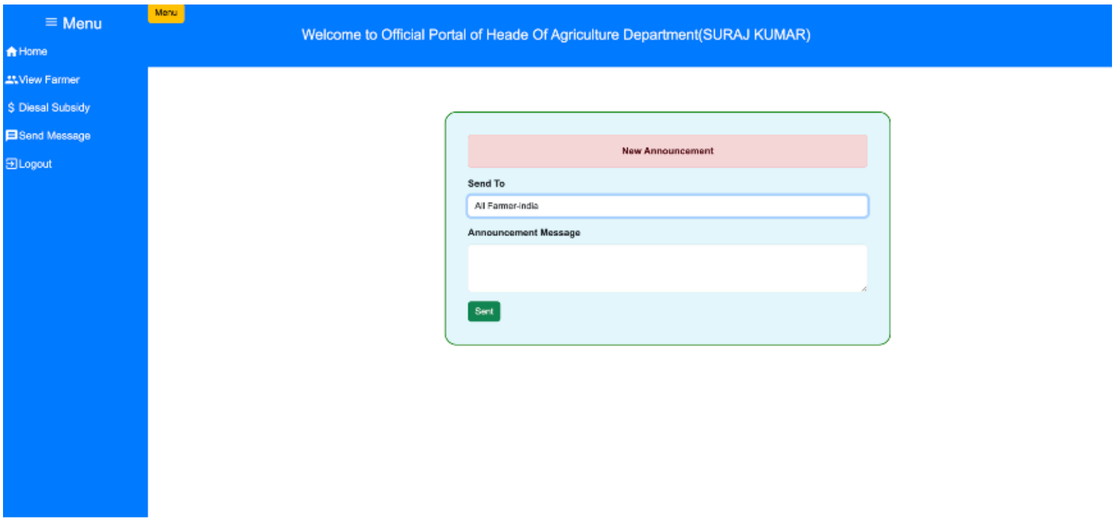


Welcome to Official Portal of Heade Of Agriculture Department(SURAJ KUMAR)

Application List

Application No	Farmer's Registration	Scheme Name	Scheme Type	Application Date	Status	View Details
5	Bihar83	PMKY	central	2024-04-13 01:28:56	status	View App
6	Bihar82	PMKY	central	2024-04-13 10:51:47	status	View App
8	Bihar97	Diesel Subsidy	central	2024-05-02 09:43:20	status	View App

List of all application received



Welcome to Official Portal of Heade Of Agriculture Department(SURAJ KUMAR)

New Announcement

Send To: All Farmer-india

Announcement Message

new Announcement

Source Code:

Some important source code

Database (Sql):

```
-- phpMyAdmin SQL Dump
-- version 5.2.1
-- https://www.phpmyadmin.net/
--
-- Host: localhost
-- Generation Time: May 02, 2024 at 06:53 AM
-- Server version: 10.4.28-MariaDB
-- PHP Version: 8.0.28

SET SQL_MODE = "NO_AUTO_VALUE_ON_ZERO";
START TRANSACTION;
SET time_zone = "+00:00";


/*!40101 SET @OLD_CHARACTER_SET_CLIENT=@@CHARACTER_SET_CLIENT */;
/*!40101 SET @OLD_CHARACTER_SET_RESULTS=@@CHARACTER_SET_RESULTS */;
/*!40101 SET @OLD_COLLATION_CONNECTION=@@COLLATION_CONNECTION */;
/*!40101 SET NAMES utf8mb4 */;

--
-- Database: `Agriculture`
--

-- --------------------------------------------------------

--
-- Table structure for table `admin`
```

```
--

CREATE TABLE `admin` (
  `id` int(2) NOT NULL,
  `name` varchar(40) NOT NULL,
  `username` varchar(10) NOT NULL,
  `pass` varchar(20) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4
COLLATE=utf8mb4_general_ci;

-- --------------------------------------------------------

--
-- Table structure for table `Announcement`
--

CREATE TABLE `Announcement` (
  `an_id` int(4) NOT NULL,
  `sender_id` int(4) NOT NULL,
  `receiver_id` varchar(30) NOT NULL,
  `sms` text NOT NULL,
  `senttime` date NOT NULL DEFAULT current_timestamp()
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4
COLLATE=utf8mb4_general_ci;

-- --------------------------------------------------------

--
-- Table structure for table `bank`
--

CREATE TABLE `bank` (
  `bank_id` int(3) NOT NULL,
  `bank_name` varchar(200) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4
COLLATE=utf8mb4_general_ci;

-- --------------------------------------------------------

--
```

```
-- Table structure for table `beej`
--

CREATE TABLE `beej` (
  `id` int(4) NOT NULL,
  `scheme` varchar(200) NOT NULL,
  `des` varchar(200) NOT NULL,
  `phasal` varchar(40) NOT NULL,
  `rate` int(4) NOT NULL,
  `anudanper` int(4) DEFAULT NULL,
  `anudankg` int(4) DEFAULT NULL,
  `limitation` int(4) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4
COLLATE=utf8mb4_general_ci;

-- --------------------------------------------------------

--
-- Table structure for table `beejapply`
--

CREATE TABLE `beejapply` (
  `b_id` int(4) NOT NULL,
  `farmer_reg` varchar(20) NOT NULL,
  `scheme` varchar(200) NOT NULL,
  `des` int(200) NOT NULL,
  `rate` int(4) NOT NULL,
  `rs` int(4) NOT NULL,
  `anudan` int(4) DEFAULT NULL,
  `total_amount` int(4) NOT NULL,
  `applydate` timestamp NOT NULL DEFAULT current_timestamp()
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4
COLLATE=utf8mb4_general_ci;

-- --------------------------------------------------------

--
-- Table structure for table `block`
--
```

```
CREATE TABLE `block` (
  `block_id` int(3) NOT NULL,
  `dist_id` int(3) NOT NULL,
  `block_name` varchar(30) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4
COLLATE=utf8mb4_general_ci;

-- --------------------------------------------------------

--
-- Table structure for table `Department`
--

CREATE TABLE `Department` (
  `d_id` int(3) NOT NULL,
  `area` varchar(60) NOT NULL,
  `Role` varchar(60) NOT NULL,
  `Name` varchar(80) NOT NULL,
  `Office` varchar(80) NOT NULL,
  `password` varchar(20) NOT NULL,
  `regdate` timestamp NOT NULL DEFAULT current_timestamp(),
  `mob` varchar(11) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4
COLLATE=utf8mb4_general_ci;

-- --------------------------------------------------------

--
-- Table structure for table `Diesal`
--

CREATE TABLE `Diesal` (
  `App_id` int(5) NOT NULL,
  `Scheme_id` int(5) NOT NULL,
  `Farmerid` varchar(50) NOT NULL,
  `Khata` varchar(40) NOT NULL,
  `Khesra` varchar(20) NOT NULL,
  `Price` int(8) NOT NULL,
  `Quantity` varchar(20) NOT NULL,
  `Irrigation_Month` varchar(20) NOT NULL,
  `Invoice_no` varchar(50) NOT NULL,
  `Invoice_pic` varchar(200) DEFAULT NULL,
  `Land_receipt` varchar(200) DEFAULT NULL,
  `App_date` datetime NOT NULL DEFAULT current_timestamp()
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4
COLLATE=utf8mb4_general_ci;

-- --------------------------------------------------------

--
-- Table structure for table `dist`
--

CREATE TABLE `dist` (
  `state_id` int(3) NOT NULL,
  `dist_id` int(3) NOT NULL,
  `Dist_Name` varchar(20) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4
COLLATE=utf8mb4_general_ci;

-- --------------------------------------------------------

--
-- Table structure for table `farmer_reg`
--

CREATE TABLE `farmer_reg` (
  `farmerid` int(10) NOT NULL,
  `farmer_type` varchar(20) DEFAULT NULL,
  `f_name` varchar(30) DEFAULT NULL,
  `l_name` varchar(30) DEFAULT NULL,
  `guardian` varchar(50) DEFAULT NULL,
  `dob` varchar(12) DEFAULT NULL,
  `sex` varchar(11) DEFAULT NULL,
  `cotegory` varchar(10) DEFAULT NULL,
  `farmer_range` varchar(20) DEFAULT NULL,
  `state` varchar(50) NOT NULL,
  `dist` varchar(50) DEFAULT NULL,
  `block` varchar(50) DEFAULT NULL,
  `village` varchar(100) DEFAULT NULL,
  `uidai` varchar(20) DEFAULT NULL,
  `bank` varchar(100) DEFAULT NULL,
  `ifsc` varchar(20) DEFAULT NULL,
  `ac` varchar(100) DEFAULT NULL,
  `email` varchar(50) NOT NULL,
  `mob` varchar(12) NOT NULL,
  `photo` varchar(200) DEFAULT NULL,
  `password` varchar(30) NOT NULL,
  `reg_date` datetime DEFAULT current_timestamp()
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4
COLLATE=utf8mb4_general_ci;

-- --------------------------------------------------------

--
-- Table structure for table `panchayat`
--

CREATE TABLE `panchayat` (
  `p_id` int(5) NOT NULL,
  `block_id` int(3) NOT NULL,
  `panchayat` varchar(50) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4
COLLATE=utf8mb4_general_ci;

-- --------------------------------------------------------

--
-- Table structure for table `Query`
--

CREATE TABLE `Query` (
  `q_id` int(4) NOT NULL,
  `sender_id` varchar(30) NOT NULL,
  `receiver_id` varchar(30) NOT NULL,
  `subject` varchar(100) DEFAULT NULL,
  `sms` varchar(500) DEFAULT NULL,
  `QDate` datetime NOT NULL DEFAULT current_timestamp(),
  `Reply` varchar(300) DEFAULT 'No',
  `ReplyDate` date DEFAULT NULL
```

```
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4
COLLATE=utf8mb4_general_ci;

-- --------------------------------------------------------

--
-- Table structure for table `Schemes`
--

CREATE TABLE `Schemes` (
  `Scheme_id` int(3) NOT NULL,
  `Scheme_Type` varchar(30) NOT NULL,
  `Eligible_Area` varchar(60) NOT NULL,
  `Scheme_Name` varchar(100) NOT NULL,
  `Link` varchar(200) NOT NULL,
  `start` date NOT NULL,
  `end` date NOT NULL,
  `Releaseddate` datetime NOT NULL DEFAULT
current_timestamp()
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4
COLLATE=utf8mb4_general_ci;

-- --------------------------------------------------------

--
-- Table structure for table `States`
--

CREATE TABLE `States` (
  `state_id` int(3) NOT NULL,
  `state_name` varchar(30) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4
COLLATE=utf8mb4_general_ci;

-- --------------------------------------------------------

--
-- Table structure for table `UpdateStatus`
--
```

```
CREATE TABLE `UpdateStatus` (
  `status_id` int(11) NOT NULL,
  `App_id` int(5) NOT NULL,
  `status` varchar(50) NOT NULL DEFAULT 'Pending',
  `Remark` varchar(300) DEFAULT NULL,
  `d_id` int(11) NOT NULL,
  `update_date` datetime NOT NULL DEFAULT current_timestamp()
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4
COLLATE=utf8mb4_general_ci;

--
-- Indexes for dumped tables
--

--
-- Indexes for table `admin`
--
ALTER TABLE `admin`
  ADD PRIMARY KEY (`id`);

--
-- Indexes for table `Announcement`
--
ALTER TABLE `Announcement`
  ADD PRIMARY KEY (`an_id`);

--
-- Indexes for table `bank`
--
ALTER TABLE `bank`
  ADD PRIMARY KEY (`bank_id`),
  ADD UNIQUE KEY `bank_name` (`bank_name`);

--
-- Indexes for table `beej`
--
ALTER TABLE `beej`
  ADD PRIMARY KEY (`id`),
  ADD UNIQUE KEY `id` (`id`,`anudankg`);
```

```
--
-- Indexes for table `beejapply`
--
ALTER TABLE `beejapply`
  ADD PRIMARY KEY (`b_id`);

--
-- Indexes for table `block`
--
ALTER TABLE `block`
  ADD PRIMARY KEY (`block_id`);

--
-- Indexes for table `Department`
--
ALTER TABLE `Department`
  ADD PRIMARY KEY (`d_id`);

--
-- Indexes for table `Diesal`
--
ALTER TABLE `Diesal`
  ADD PRIMARY KEY (`App_id`),
  ADD UNIQUE KEY `Farmerid` (`Farmerid`),
  ADD KEY `Scheme_id` (`Scheme_id`);

--
-- Indexes for table `dist`
--
ALTER TABLE `dist`
  ADD PRIMARY KEY (`dist_id`);

--
-- Indexes for table `farmer_reg`
--
ALTER TABLE `farmer_reg`
  ADD PRIMARY KEY (`farmerid`),
  ADD UNIQUE KEY `mob` (`mob`);

--
```

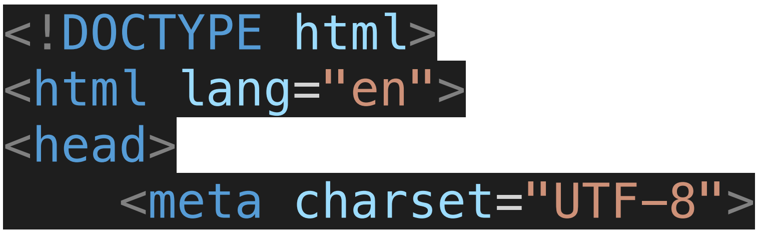
```
-- Indexes for table `panchayat`
--
ALTER TABLE `panchayat`
  ADD PRIMARY KEY (`p_id`);

--
-- Indexes for table `Query`
--
ALTER TABLE `Query`
  ADD PRIMARY KEY (`q_id`);

--
-- Indexes for table `Schemes`
--
ALTER TABLE `Schemes`
  ADD PRIMARY KEY (`Scheme_id`);

--
-- Indexes for table `States`
--
ALTER TABLE `States`
  ADD PRIMARY KEY (`state_id`);

--
-- Indexes for table `UpdateStatus`
--
ALTER TABLE `UpdateStatus`
  ADD PRIMARY KEY (`status_id`),
  ADD KEY `d_id` (`d_id`);

--
-- AUTO_INCREMENT for dumped tables
--

--
-- AUTO_INCREMENT for table `admin`
--
ALTER TABLE `admin`
  MODIFY `id` int(2) NOT NULL AUTO_INCREMENT;
```

```
--
-- AUTO_INCREMENT for table `Announcement`
--
ALTER TABLE `Announcement`
  MODIFY `an_id` int(4) NOT NULL AUTO_INCREMENT;

--
-- AUTO_INCREMENT for table `bank`
--
ALTER TABLE `bank`
  MODIFY `bank_id` int(3) NOT NULL AUTO_INCREMENT;

--
-- AUTO_INCREMENT for table `beej`
--
ALTER TABLE `beej`
  MODIFY `id` int(4) NOT NULL AUTO_INCREMENT;

--
-- AUTO_INCREMENT for table `beejapply`
--
ALTER TABLE `beejapply`
  MODIFY `b_id` int(4) NOT NULL AUTO_INCREMENT;

--
-- AUTO_INCREMENT for table `block`
--
ALTER TABLE `block`
  MODIFY `block_id` int(3) NOT NULL AUTO_INCREMENT;

--
-- AUTO_INCREMENT for table `Department`
--
ALTER TABLE `Department`
  MODIFY `d_id` int(3) NOT NULL AUTO_INCREMENT;

--
-- AUTO_INCREMENT for table `Diesal`
--
ALTER TABLE `Diesal`
```

```
  MODIFY `App_id` int(5) NOT NULL AUTO_INCREMENT;

--
-- AUTO_INCREMENT for table `dist`
--
ALTER TABLE `dist`
  MODIFY `dist_id` int(3) NOT NULL AUTO_INCREMENT;

--
-- AUTO_INCREMENT for table `farmer_reg`
--
ALTER TABLE `farmer_reg`
  MODIFY `farmerid` int(10) NOT NULL AUTO_INCREMENT;

--
-- AUTO_INCREMENT for table `panchayat`
--
ALTER TABLE `panchayat`
  MODIFY `p_id` int(5) NOT NULL AUTO_INCREMENT;

--
-- AUTO_INCREMENT for table `Query`
--
ALTER TABLE `Query`
  MODIFY `q_id` int(4) NOT NULL AUTO_INCREMENT;

--
-- AUTO_INCREMENT for table `Schemes`
--
ALTER TABLE `Schemes`
  MODIFY `Scheme_id` int(3) NOT NULL AUTO_INCREMENT;

--
-- AUTO_INCREMENT for table `States`
--
ALTER TABLE `States`
  MODIFY `state_id` int(3) NOT NULL AUTO_INCREMENT;

--
-- AUTO_INCREMENT for table `UpdateStatus`
```

```
--
ALTER TABLE `UpdateStatus`
  MODIFY `status_id` int(11) NOT NULL AUTO_INCREMENT;

--
-- Constraints for dumped tables
--

--
-- Constraints for table `Diesal`
--
ALTER TABLE `Diesal`
  ADD CONSTRAINT `diesal_ibfk_1` FOREIGN KEY (`Scheme_id`)
REFERENCES `Schemes` (`Scheme_id`);

--
-- Constraints for table `UpdateStatus`
--
ALTER TABLE `UpdateStatus`
  ADD CONSTRAINT `updatestatus_ibfk_1` FOREIGN KEY (`d_id`)
REFERENCES `Department` (`d_id`);
COMMIT;

/*!40101 SET
CHARACTER_SET_CLIENT=@OLD_CHARACTER_SET_CLIENT */;
/*!40101 SET
CHARACTER_SET_RESULTS=@OLD_CHARACTER_SET_RESULT
S */;
/*!40101 SET
COLLATION_CONNECTION=@OLD_COLLATION_CONNECTION */;
```

Homepage.php



```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Where energy is opportunity</title>
    <link rel="stylesheet" href="https://fonts.googleapis.com/css2?family=Material+Symbols+Outlined:opsz,wght,FILL,GRAD@24,400,0,0" />
    <link rel="stylesheet" href="style.css">
    <style>
```

```
    @import url("https://fonts.googleapis.com/css2?family=Open+Sans:ital,wght@0,300..800;1,300..800&family=Poppins:wght@100;900&family=Roboto:ital,wght@0,100;0,300;0,400;0,500;0,700;0,900;1,300;1,900&display=swap");
:root {
}
onclick="document.getElementById('search_i').style.display='flex'"><span class="material-symbols-outlined"> search</span></li>
                    <li><a href="#">About Us</a></li>
                    <li><a href="./User/login_index.php">Login</a></li>
                    <li><a href="./User/Registration.php">Registration</a></li>
                    <li><a href="#">News</a></li>
                    <li><a href="./admin/
login.php">Official Login</a></li>
                </ul>
                <div class="seperator"></
div>
        <div class="logo">
            <img src="./image/e-krishi.png"
alt="" width="100%" height="100%">
        </div>
   </header>
   <div class="home">

    <div id="search_i"><input
type="Search"><div class="cl"
onclick="document.getElementById('search_i')
.style.display='none'"><span
class="material-symbols-outlined">
        close</span></div></div>
    <div class="shadow-home"></div>
    <div class="home-content">
        <p>E-Krishi Connect</p>
        <P>Aapki Kheti, Aage Badhe.</P>
        <p style="color:rgb(113, 114,
113)">" हर भारतवासी के थाल में बिहार का एक व्यंजन हो
"</p>
    </div>
    <div class="list">
        <div class="item">
            <p>Scheme Announced</p>
        </div>
        <div class="item">
            <p>Total Farmer</p>
        </div>
        <div class="item">
```

```
            <p>Total Benificiary</p>
        </div>
        <div class="item">
            <p>Upcomming Schemes</p>
        </div>
    </div>
   </div>
   <div class="second">
        <p>Happy Farmers</p>
        <p>Through e-Krishi Connect, I 
cultivate not just crops, but a future 
rooted in transparency and trust.
        </p>
        <div class="secont-slider">
            <div class="pic1">
                <div class="bluring"> </div>
                <div class="pic1-content">
                    <p>SUSTAINABILITY</p>
                    <p>Lorem ipsum dolor sit 
amet,elit.  </p>
                </div>
                <img src="./image/lbg.webp" 
alt="" width="100%" height="100%">
                <div class="arrow">
                    <span class="material-
symbols-outlined"> arrow_circle_right </
span>
                </div>
            </div>
            <div class="pic1">
                <div class="bluring"> </div>
                <div class="pic1-content">
                    <p>SUSTAINABILITY</p>
```

```
          <p>Lorem ipsum dolor sit
amet,elit.  </p>
        </div>
        <img src="./image/img2.jpeg"
alt=""  width="100%" height="100%">
        <div class="arrow">
          <span class="material-
symbols-outlined"> arrow_circle_right </
span>
        </div>
      </div>
      <div class="pic1">
        <div class="bluring"> </div>
        <div class="pic1-content">
          <p>SUSTAINABILITY</p>
          <p>Lorem ipsum dolor sit
amet,elit.  </p>
        </div>
        <img src="./image/ll.png"
alt=""  width="100%" height="100%">
        <div class="arrow">
          <span class="material-
symbols-outlined"> arrow_circle_right </
span>
        </div>
      </div>
      <div class="pic1">
        <div class="bluring"> </div>
        <div class="pic1-content">
          <p>SUSTAINABILITY</p>
          <p>Lorem ipsum dolor sit
amet,elit.  </p>
        </div>
```

```
                <img src="./image/MixLogo.png" alt=""  width="100%" height="100%">
                <div class="arrow">
                    <span class="material-symbols-outlined"> arrow_circle_right </span>
                </div>
            </div>
        </div>
   </div>

</body>
</html>
```

Header.php

```
<?php
include '../includes/dbConnection.php';
session_start();
$userid=$_SESSION['username'];
$sql="select * from farmer_reg where concat(state,farmerid)='$userid'";
$res=mysqli_query($conn,$sql);
$data=mysqli_fetch_assoc($res);
?>
<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <link rel="stylesheet" href="/
Agriculture/css/style.css">
    <link rel="stylesheet" href="/
Agriculture/css/index.css">
    <link href="https://cdn.jsdelivr.net/
npm/bootstrap@5.3.1/dist/css/
bootstrap.min.css" rel="stylesheet"
        integrity="sha384-4bw+/aepP/
YC94hEpVNVgiZdgIC5+VKNBQNGCHeKRQN+PtmoHDEXup
pvnDJzQIu9" crossorigin="anonymous">
    <link rel="stylesheet"
        href="https://fonts.googleapis.com/
css2?
family=Material+Symbols+Outlined:opsz,wght,F
ILL,GRAD@24,400,0,0" />
        <link rel="stylesheet"
        href="style_header.css"/>
    <title>Agriculture Bihar</title>
</head>

<body>
    <div class="container-lg bg-light main-
content-login">
        <section class="topArea">
            <div class="logo">
                <img src="/Agriculture/
image/farmer_icon.png" alt width="100%">
            </div>
            <div>
            <span class="text-light">Krishi 
E-Connect</span>
                    <i class="text-
light">One Nation One Portal All Farmer</i>
            </div>
            <div>
                <img src="/Agriculture/
image/MixLogo.png" alt="" width="100%">
                <p><?php echo "$data[f_name]
$data[l_name]"?></p>
            </div>
            <div class="mixlogo">
                <img src=<?php echo
$data['photo']?> alt="" width="100%"
height="100%"
                    style="border-radius:
10px;">
            </div>

        </section>
        <div class="navigation">
            <ul>
                <li><a
href="farmerdashboard.php">Home</a></li>
                <li class="dropdown-nav"><a
href="">Portal Navigation</a>
                    <div class="navigation-
content">
                        <ul class="inside-
nav" style="display: block;">
                            <li><a
href="#">Update Details</a></li>
                            <li><a
href="#schemeinfo">Check Scheme Info</a></
li>
                            <li><a
href="#">Cancel Registration</a></li>
                            <li><a
href="#Announcement">Announcement</a></li>
```

```
                            <li><a href="#Officer">Officer Details</a></li>

                        </ul>
                    </div>
                </li>
                <li><a href="AppliedScheme.php">Scheme Applied</a></li>
                <li><a href="StatusQuery.php">Query Status</a></li>
                <li><a href="">Contact</a></li>
                <li><a href="logout.php">LogOut</a></li>
            </ul>
        </div>
```

Registration.php

```

        <?php
if(isset($_FILES['photo']))
        {
            $tmpfile=$_FILES['photo']['tmp_name'];
            $filename=$_FILES['photo']['name'];

if(move_uploaded_file($tmpfile,"../upload_image/".$lname.$filename));
```

```
            $img="../upload_image/".$lname.
$filename;
        }
        $count=0;
        $sql3="select mob from farmer_reg 
where mob='$mobile'";
        $res=mysqli_query($conn,$sql3);
        $count=mysqli_num_rows($res);
        if($count>0)
        {
            echo "Mobile number is already 
registered";
        } else
        {
$sql="insert into 
farmer_reg(farmer_type,f_name,l_name,guardia
n,dob,sex,
cotegory,farmer_range,state,dist,block,villa
ge,
uidai,bank,ifsc,ac,email,mob,password,photo)
values('$farmerType','$firstName','$lastName
','$guardian',
'$dob','$sex','$category','$farmerRange','$s
tate',
'$dist','$block','$village','$uidai','$bank'
,
'$ifsc','$ac','$email','$mobile','$Password'
,
'$img');";
if(!mysqli_query($conn,$sql))
{
//    $error=mysqli_error($conn);
//    print("Error Occurred: ".$error);
```

```
    echo "Registration 
faild".mysqli_error($conn);
}else
{
    $regi=mysqli_insert_id($conn);
    echo "
    <div class='registration_details'>
    <div class='container'>
        <div class='icon'><i class='fas fa-
check-circle'></i></div>
        <div class='message'>Registration 
Successful!</div>
        <p id='regno'>Your Registration No:
$state$regi and Password :$Password</p>
        <a href='../index.php' 
class='button'>Login</a>
    </div>
    ";


}
        }
?>
```

Conclusion

In conclusion, the e-Krishi Connect portal stands out as a transformative tool for modernizing agricultural services, facilitating seamless communication between farmers and government authorities. Leveraging advanced technologies such as PHP, HTML, CSS, jQuery, and Bootstrap, along with the seamless integration of Aadhaar authentication and SMTP mailing APIs, the portal significantly improves accessibility and transparency within the agricultural sector. Its intuitive interface and robust features empower farmers to easily access crucial information, apply for government schemes, and engage directly with relevant authorities, thereby promoting efficiency and accountability.

Looking towards the future, the e-Krishi Connect portal sets a solid groundwork for forthcoming innovations, such as integrating machine learning for feedback analysis and implementing location-based auto verification systems. These advancements hold the potential to further refine agricultural services, streamline bureaucratic processes, and drive sustainable development in rural areas. With ongoing refinement efforts and collaborative engagement with stakeholders, the portal is poised to assume a pivotal role in revolutionizing agricultural governance, enhancing livelihoods, and fostering holistic growth across communities.

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